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BALTIMORE, DECEMBER 13, 1895.

STATE OF SOUTH CAROLINA,
Executive Chamber,
Columbia, December 6.

R. H. Edmonds Esq.,
Editor Manufacturers' Record,
Baltimore, Md.:

Dear Sir—Governor Evans directs me to thank you for the complete refutation, in your excellent journal of recent date, of the false and unwarranted attacks made by General Scofield upon our people. You may rest assured that your effort in our behalf was highly appreciated.

Very respectfully,

U. X. GUNTER, JR.,
Private Secretary.

A Cotton Exposition in Chicago

The recent visit of leading Chicago business men to the South has resulted in a plan to hold a cotton exposition in that city, with a view to stimulating the trade interests between the West and this section. It is almost needless for the Manufacturers' Record to say that, properly handled, such an exposition will prove of almost infinite value to the South. We have long sought to encourage closer trade relations between the great West and the South, and an exposition of this kind, emphasizing the South's advantages for cotton production and cotton manufacturing in all its diversified forms, would not simply prove interesting and instructive to the people of the West, but would create a determination on their part, even stronger than already exists, to take an active hand in the industrial development of the Southern States. Such an exposition would result in making Chicago a great centre for Southern interests, and out of it would come an increased flow of population and of money seeking profitable investment in the Southern States. The business men of Chicago and of the South alike must necessarily be interested in a movement of this kind. It is one fraught with great possibilities, and the Manufacturers' Record is glad to note the enthusiastic support which it is receiving. The movement inaugurated in Augusta is being vigorously pressed at that point, and the Chicago people have taken it up with a disposi-

tion which seems to guarantee that it will be carried out on a scale commensurate with the way in which that city usually handles every enterprise that it undertakes. The close business alliance of Chicago—the typical financial and business centre of the West—with the South means many millions of dollars for Southern advancement, and in addition to that a great increase in the southward trend of population from all the Northwestern States. Chicago sees its opportunity, and sees that the South offers a field for profitable work such as even the West never afforded in its palmiest days, and Chicago is determined to fully utilize the chance. With Chicago on one side, New York, Boston and Baltimore on the other, competing to see which shall gain the lion's share of Southern business and make the largest investments in Southern industries, added to the great work which the South itself is doing in its own upbuilding, the outlook is one which may well thrill every man interested in the progress and prosperity of this section.

The New South.

We have often said that the new South is bound to be the most prosperous section of this great country. Prosperity is not the outgrowth of mere sentiment. It requires as a foundation to build upon natural and varied resources. These the Southern States possess. They have advantages in the field, in the forests, in the mines and in the climate that no other section of this country is capable of exhibiting. Now all that remains is for population, enterprise and capital to go in and possess this new land, full as it is of promise and overrunning as it is with natural resources.

The new South of which we speak is to Cincinnati the land of promise. There may be doubting Thomases among us, but these will be converted, and the future generations of merchants, manufacturers, agriculturists and capitalists who may hereafter read these lines may be only surprised that the foresight of the writer was not equal to the hindsight of those who are to be active participants in future developments. —Richard Smith, in the Cincinnati Commercial Gazette.

For fifteen years the Manufacturers' Record has been proclaiming these truths. It has claimed that nature has given this section advantages unequalled elsewhere in the world, and that prosperity commensurate with natural resources would inevitably be the lot of the South. The whole world seems to be at last realizing this.

The shame is on South Carolina; on all of us, unhappily, even those who have braved the rage and curses of the mob in our efforts to establish the supremacy of civilization and of law. Nothing can remove it but the verdict of a jury inspired by civic duty and moral courage. To receive such a trust and to administer it faithfully would be a service of rare honor, achieving more of enduring value for South Carolina than was ever won for her by warrior in battle.—Columbia (S. C.) State.

Such is the closing paragraph of an editorial in the State, demanding that the law shall be upheld by the punishment of men who are known to be guilty in a particularly flagrant case. The State has nobly battled for the right; it has untiringly worked to show that crime cannot be stopped by crime; that the law must be supreme. The State has been doing a great work for

South Carolina, and some day this will be more fully appreciated than it is now.

Bids for the Battleships—Who Shall Build Them?

When the bids for the two big battleships authorized by the Fifty-third Congress were opened at the Navy Department on Saturday, November 30, there were two great surprises in store for the country. It had been supposed that the Cramps, of Philadelphia, would underbid all their rivals, and that the contracts would certainly go to that firm. When it was realized that a Southern shipbuilding firm had submitted a bid for the two ships at a price of \$1,000,000 less than their Philadelphia rival had estimated, not only the officials of the Navy Department, but the Northern shipbuilders, were more than astonished. The plans upon which both firms submitted bids were those of the Navy Department. For six months previous to the authorization by Congress the board of construction of the Navy Department had almost definite knowledge that these two ships would be appropriated for, and exceeding care was taken in preparing the designs.

The plans of battleships in commission and under construction by European nations had been carefully studied and the general belief was expressed that the Kearsarge and her mate would be the finest ships of their class afloat. The details had been carefully gone over, and several new features were applied to the location and character of the turrets.

The board of construction which approved these plans consisted of such men as Commodore Melville, the efficient head of the bureau of steam engineering; Commodore Sampson, who is regarded as one of the great experts upon ordnance and armor; Constructor-General Hichborn, who has had unusual opportunities for studying the naval architecture of warships, and of other bureau chiefs, who are specialists in their own departments.

It is reasonable to suppose that the designs submitted by such officials would have much to commend them, for the resources of the whole Navy Department were at their command, and each of the bureau chiefs had efficient aids to assist them in working out the details.

It was not surprising under such circumstances that the Newport News establishment believed that the Navy Department would prefer their own designs to those submitted by people who had neither the training nor the opportunity to prepare plans of equal merit. They must have known that the archives of the Navy Department contained confidential reports which were not within reach of private individuals, and that however gifted the general superintendent and designers of private firms might be, they would be at a great disadvantage when their plans were put in comparison with the naval experts. In bidding only upon the de-

partment's plans they displayed sound judgment and common sense. All the information within reach of the Cramps was also accessible to the firm at Newport News, and in estimating upon the department's designs alone this firm bore testimony to the fact that the plans of the Navy Department were the best obtainable.

The bids submitted by the Newport News Company for the construction of the gunboats Nashville and Wilmington evidently made a greater impression upon the Cramps than it did upon the Navy Department. The Philadelphia rivals realized the fact that Mr. Huntington was not only anxious to build up the shipbuilding plant, but that the development of the town itself was of greater importance, and that in carrying out the second purpose he could afford to build the battleships, if necessary, at actual cost. The fact was plain to the Delaware shipbuilders that Mr. Huntington was also determined to give steady employment to the many experts he had gathered at Newport News, and that the building of the battleships would afford him the opportunity of holding these men together. With the resources at his command, Mr. Huntington was able to purchase materials and supplies as cheaply as could be done by any of his rivals, and in the matter of fuel he was at a great advantage. These facts probably escaped the attention of the officials of the Navy Department, although they were fully known to the directors of the shipbuilding plant at Philadelphia.

The Cramps, anticipating that the Newport News Company would cut loose under such conditions from its competitors, and would put a very wide difference between itself and them, by submitting exceedingly low figures, sent a series of bids and plans for the consideration of the department. Whether such bids and plans in connection with the construction of the Kearsarge and her mate are in accordance with the policy of the department, or within the province of the Secretary to accept, is a doubtful question. Secretary Herbert will undoubtedly give the matter great consideration before he will take such view of the matter. It is to be supposed that the naval authorities are better equipped than private firms for the collection of knowledge in regard to their own wants. The naval attaches in Europe and Asia, the intelligence officers aboard the several ships, the experts who have been sent to different places to secure special information, the experience of the department in dealing with several firms and their observation with the ships in commission, are elements which must command great weight in determining the character of the ship which should be supplied to the naval service.

If the government will get a greater equivalent for the money expended in constructing ships upon the plans of private firms than those submitted by the board of naval experts, then the period has arrived when not only the

ships themselves, but the plans for their construction should be submitted to private firms. That the great shipbuilding plants can suggest changes of detail is evident, and the officials of the Navy Department have shown a wise discretion in amending details of plans upon the recommendation of practical shipbuilders. But this is quite a different matter from accepting new plans.

That such men as Commodores Sampson, Melville and Hichborn do not know what they want seems hardly credible. These men have been identified with the development of the new navy, and the remarkable success that they have had with our cruisers and gunboats shows that they are fully capable of handling the design of battleships. It is not likely that they will discredit their own work by adopting plans which have been the work of an individual designer, who has given a few months' consideration to the subject, while their well-prepared designs have been the development of a period several times as long as that given by the non-professional.

There is a well-directed and desperate effort upon the part of the Philadelphia shipbuilders to secure the construction of these ships. They will leave no stone unturned to obtain the contracts, and it will be necessary for the Newport News people to demand in no uncertain terms that their rights in this matter be respected.

One of the objections urged against the building of the ships South is they have had no experience in building war vessels. In answer to this it may be said that, without hesitation, the officials of the Navy Department gave the contract to the Newport News Company for the building of the gunboats Nashville and Wilmington. It should not be forgotten also that the first warship ever built by the Cramps was one of their most successful. With great pride they point to the work of the gunboat Yorktown, although it was the first warship of any description that they ever built for the United States government. The first warships built at Bath, Chester, Boston and at San Francisco were all successes, and it is a certainty that the managers of the Newport News plant will see that the first battleship which leaves their dock will also surpass the official requirements.

It is to be presumed that the offer of the Cramps to construct two vessels, armor them and put their guns on board, and then to construct a third vessel, supplying only hull and machinery, is submitted in good faith. But the proposition is against the spirit and text of the law for the construction of the vessels, and if adopted would be conducive to fraud. Some successor to Secretary Herbert might commence the building of four vessels in this way, when the act authorizing their construction only permitted the building of two. The vessels, partly built and in the hands of the constructors, would place the government within the power of these builders, and their final cost before completion might reach unprecedented figures.

It has been the policy of the several Congresses to distribute the work of building the great battleships among the various ship construction plants, and the suggestion of Mr. Cramp to commence the building of three ships in this way is against the expressed wish and intention of both branches of the legislative body. It was in accordance with this policy that the Congress restricted the building of the gunboats and torpedo-boats to such conditions

that it would be impossible for any one firm to secure all the contracts.

A close analysis of Mr. Cramp's several bids and plans will show that he bases his ability to construct battleships at a reduced cost on the supposition that he can purchase armor at a less cost than the government. He practically allows \$1,000,000 as the cost of the armor for each of the ships, the naval authorities estimating a much greater sum to be necessary.

Why should not President Orcutt, of the Newport News Company, be able to secure armor from the Carnegie and Bethlehem companies at the same price given the Delaware river ship-builders? Although both of these manufacturers of armor are situated in Pennsylvania, they undoubtedly have one price for this patented article, and their establishments would soon close up if they attempted to limit their output to one ship construction firm.

The securing of these contracts is a matter of great importance to the commercial interests of the South. The maritime exchanges and the chambers of commerce of Baltimore, Richmond and Norfolk, and in fact of the whole South, should take the same action that has been done by the general assembly of the State of Virginia. Strong and vigorous resolutions should be adopted, and committees should be appointed to visit Washington and request the Secretary of the Navy to award the contracts to the lowest bidders in accordance with the government specifications.

The Newport News Company is entitled to the construction of these vessels. Their plant is of sufficient size to do the work within the time specified, and the character of their machine tools are of such description that the work can be carried on in an efficient manner, no matter how stringent are the specifications. A Southern shipyard underbid all others by nearly \$1,000,000, and this contract should go to the South. Its value to this whole section cannot well be overestimated. Every man interested in the South is interested in the award of this contract to the company which underbid all competitors.

The steady trend of foreign exports from the West through Southern ports is again emphasized. This time it is the charter of a steamship to load 170,000 bushels of corn at Galveston for Belfast. This is the first full cargo of corn ever shipped from Galveston and is an unusually heavy one for any port. The steamer taking out this cargo will, it is reported, draw twenty feet ten inches, which illustrates what deepening the channel is doing for Galveston.

Not only Northern farmers, but Southern farmers are investing their money in Southern lands, as is shown by the purchase of a tract of 8000 acres of land near Augusta, Ga., recently by Mr. John E. Smith, a planter residing in that vicinity. Mr. Smith paid \$33,000 cash for the property, and states that he will take personal charge of it and operate it as a vast farm, running at least 200 plows.

The National Association of Brickmakers, at its recent meeting in Atlanta, elected officers as follows: R. B. Morrison, of Rome, Ga., president; G. M. Fiske, of Massachusetts, first vice-president; Raymond Penfield, New York, second vice-president; Edward Orton, Ohio, third vice-president; T. A. Randall, Indianapolis, secretary, and John W. Sibley, Alabama, treasurer.

The Southern Boy's Opportunity.

For the next quarter of a century industrial interests will claim predominating attention throughout the South. The growth of manufactures, the increase of mining and the building of railroads will afford opportunities for profitable employment for every boy in the South who will thoroughly fit himself for such work. The leaders in Southern business affairs henceforth will be the leaders in industrial pursuits. Commenting on these facts the Charlotte (N. C.) Observer, in an unsigned article, which, however, was doubtless written by Mr. D. A. Tompkins, whose pre-eminent success entitles him to speak advisedly, says:

"It's hard to teach an old dog new tricks. And it's also hard to constrain a people from an old habit of thought. Many of the habits of thought of the ante-bellum times still stay with the Southern people. In those old days the planters' sons served apprenticeships in the business of planting without knowing it. The average planter's son, after having been brought up on the plantation, was accustomed to consider that after a decent college education he was qualified to take charge of a plantation, and so he was, as a general rule. But his college education was not his sole qualification. By experience he knew how to plow, he knew about horses, mules, about hogs, etc., etc. He had, in fact, a first-rate practical training in all the departments of a plantation. This training was the natural consequence of the surrounding conditions. He served an apprenticeship at riding mules without ever knowing that he was working. The result was useful, however—just as useful as though the boy had been compelled to study muleology. Little stress was laid on this apprenticeship, because it was not necessary to consider it. Being on a plantation, a boy could not well grow up without, in one way or another, engaging in all the plantation pursuits to the extent of learning how to do them. He found it just as attractive to try his hand at driving a six-mule team as he now finds it to learn to ride a bicycle. In those old days, if the parents looked out for the education and refining influences, the boy might be relied upon to learn all the characteristics of slaves in general and of each individual slave on the place; of mules in general and of each individual mule on the place; of horses, cows, sheep, goats; of the habits of foxes, rabbits, crows and other depredators of farm products. In truth, if the store of experience and practical knowledge that a boy used to get on a plantation by the time he was sixteen years old was supplemented by a college education, it is difficult to perceive how such an equipment could be improved upon for qualifying a young man to take charge of a plantation at about twenty-one years old.

"And in those old ante-bellum days the young fellow being well qualified found it easy to make a start in life, and it was commonly more than a self-supporting start they made. As they grew older they became rich—they made plenty of money to meet the demands of a gentleman and to spare. They never were penurious and they never quibbled over petty accounts, because with their ample qualifications it was easier to pay petty claims than to waste time and resources in controverting them.

"The sons of these men cannot be materially different from their fathers in their characteristics and abilities.

"Then why do the young men of the present day find it so difficult to make a successful start in life, even when well educated? Because the conditions have changed and the valuable apprenticeship

is now lost. The modern occupations are chiefly industrial, and not agricultural. A young man of decent appearance can become a dry goods clerk without training, but before the war he could not ride a mule without experience, and since the war he cannot set up a steam engine or a carding machine and start it in operation without experience. All that is required for the generation of '95 is to be as successful in industrial pursuits as the generation of '50 were in agriculture; is that they shall have a good practical training and a good technical education. For occupation in manufactures it is as essential for a young man to serve a fair time at some trade, such as that of machinist, pattern-maker, etc., as it was essential for a boy to learn the practical features of plantation life before he attempted to undertake the management of a plantation. I conceive the following to be a good course of study for a boy who intends to go into the manufacture of cotton, either as a principal or employe:

"1. A common school education up to the age of fifteen or sixteen.

"2. An apprenticeship at the trade of machinist or pattern-maker for two or three years.

"3. College education for about three years at such schools as many of the Southern States are establishing as A. and M. colleges.

"4. One year to learn the process of cotton manufacture.

"Assuming that the apprenticeship would be started at fifteen years of age, the above course would be finished at about twenty-two. The total expense would be about as follows:

"For three years' apprenticeship for the period when the youth was between fifteen and eighteen, cost per year, say \$200.

"Deduct wages of apprentice, at say fifty cents per day, 300 days equal \$150.

"Difference to be furnished by parents equals \$50 per year for three years, equals \$150.

"Three years at any such school as any of the State agricultural and mechanical colleges, at say \$300 per year for three years, equals \$900.

"The year of cotton-mill practice ought to be self-supporting, and the total cost to a family of such a course of education and training would be about \$1000 through a period of six years. This is about \$1000 in seventy-two months, which is about \$13 per month; and if the time is too long, the apprenticeship might be cut down to two years instead of three, and the college course might also be cut to two years. The one year of special training in a cotton mill subsequent to the college training would seem to be necessary. Commencing at fifteen years of age, counting them two years for apprenticeship, two years for study, one year for training in a special branch, would make five years, which would qualify a boy to start life at twenty years old. Counting the year self-supporting, then for four years—two apprenticeship and two for study—the total cost ought to be reduced to \$500 or \$600, and perhaps even less, if the boy himself is resourceful.

"Numberless college graduates are daily applying for 'positions.' The want of any practical experience makes the most of them worthless until they have acquired some training. Nobody wants to be bothered with the average college graduate just after graduation, and while he is in his raw state. Horace Greeley well expressed it when he said that 'of all horned cattle a new college graduate in a printing office was the worst.' This applies to other occupations as well as printing.

"The average college graduate devotes himself to applying by letter for positions. He scorns to go to work, to operate four

looms as a weaver or to turn in to help in the cardroom.

"I know a young man who has gone through a course of apprenticeship such as is outlined above, and he has never to my knowledge made application for work since his period of training and education. He gets offers of positions without asking for them. Instead of writing letters of application he gets letters of the following kind:

"Cleveland, Ohio, October 10, 1895.
"Messrs. R. D. Wood & Co., 400 Chestnut street, Philadelphia, Pa.:

"Dear Sir—I am requested by your representative, Mr. A. S. Mallory, to formally accept your holder (a large gas holder). It will undoubtedly be wholly painted tomorrow, and when that is done, your work is through unless putting gas into it should develop some leaks not now noticeable.

"In accepting it, which I, therefore, do, I wish to express my satisfaction at the way in which the work has been done. It is very creditable to your representative to have finished it so much inside of the time in which the work was to have been done, and shows to you the faithfulness and energy which I have seen him constantly putting into the job. So far as I can see the whole thing is very creditable to your company, and I am very much pleased with its appearance.

"Yours truly,
[Signed.] "M. S. GREENOUGH,

"President."

"The above was written about the work of a Charlotte boy who is a college man, but who served apprenticeship at home, in Charlotte, before he went to college.

"To those young men who have been through college, but who have no training, I should say go to work. Stop seeking 'positions.' Take a job as a weaver in the cardroom, anywhere, to learn how to do something. In answer to the question, 'What can you do?' almost every modern graduate is compelled to say absolutely nothing. The only possible way to overcome this difficulty is to go to work and learn how to do something. If this is done, the matter of a position will take care of itself."

Seeking Southern Trade.

In one respect the Cotton States Exposition eclipses even the Columbian Exposition. Different Northern cities are sending, on days set apart for them, large delegations to the exposition at Atlanta, and the delegations are generally composed of the most prominent men in business, with a sprinkling of men prominent in politics.

The Cotton States Exposition is a trade movement, and the Northern cities realize that it is important that they should take advantage of it as a trade movement. This country, in the near future, must command the lion's share of the commerce of this continent if American trade expands. South America is the natural market of the United States.

But aside from this, the principal cities of the North are reaching out after Southern trade. The South is now the petted section of the Union. This means quite a change, but the change has taken place. The South is comparatively free from debt. It showed in 1893 and 1894 that it was better prepared than any other section when the panic was shaking the country and covering it with financial wrecks. As compared with other sections the South was solid.

This fact, coupled with others, has turned the attention of the American people to the South as the present and future centre of the nation's progress, and the great cities of the North are bidding for Southern trade. The relations of the sections are friendlier now than they ever

were before, and the good feeling will inure to the benefit of all.—Jacksonville Times-Union.

NEWPORT NEWS SHIP-YARD.

C. P. Huntington Replies to Some Criticisms of Its Facilities—Will Probably Build the Battleships.

The Manufacturers' Record regrets to note that the bid of the Newport News Shipbuilding & Dry-Dock Co. for the two new battleships for the United States has called forth comment from one of the Northern papers, which seems to be inspired to criticise every Southern enterprise simply because it is Southern. The Newport News Company, as readers of the Manufacturers' Record are well aware, underbid all competitors, including the Cramps, by several hundred thousand dollars on each vessel. It made its estimates in reply to invitations from the government, and simply in a business-like way. The remarkably low figures it quoted we presume have provoked the article referred to, which has appeared in a Philadelphia paper. It purported to be an interview with a naval expert, in which the latter stated that the Newport News plant was without proper facilities for the construction of battleships, that the force of hands was too small, that race prejudice exists, and that much more time would be required to build the ships than at Cramps' ship-yard. It is very significant that the "naval expert," whose name is carefully omitted, detailed the facilities of the Cramps for doing such work, and incidentally gave them an extensive free advertisement.

As to the bids of the Newport News Company and the Cramps for three ships on their own plans for \$8,000,000, two of them to be armored, the Newport News tender of \$4,500,000 will give the government two battleships on its own plans, which, after the government has armored them, will make the entire cost of these two vessels \$6,000,000, thus leaving \$2,000,000 of the appropriation to be turned into the treasury, which is considered quite as good a bargain for the government as to receive a third ship from Cramps unarmored, which has not been authorized by Congress, which the Secretary would manifestly have no right to receive, and which was not made from government plans. As to the charge of delay in construction of gunboats Nos. 7, 8 and 9, now approaching completion at this yard, Secretary Herbert's report for 1895 has the following, which is a sufficient answer: "The work on gunboats Nos. 7, 8 and 9 (Nashville, Wilmington and Helena) is progressing satisfactorily. The hulls of these vessels are about completed. The two former ships were successfully launched on the 19th of October. The date of launching the latter has not yet been determined. She is almost as far advanced as Nos. 7 and 8, but the contractor, having ample space for all work in hand, has determined not to put her in water as yet, for the reason that work can be prosecuted to better advantage with the vessel on the stocks." In fact, these vessels are nearer up to time than any other government craft which has been constructed in private yards, as the contract calls for finishing them the latter part of January, 1896. Several months' delay in consequence of changes ordered by the government has occurred; for one item alone an extension on the part of the government for four months will be accorded—fire-proofing of the woodwork in the gunboats, which is also referred to in Secretary Herbert's report of present year. The fact is that had it not been for these unavoidable delays and the

tardy delivery of material on the part of steel mills, the three gunboats in question would have been finished during the present year. Therefore, the reference to the delays at Newport News is malicious, or occasioned by gross ignorance on the part of the writer.

The ability of the Newport News Company to execute large contracts is further illustrated by the work it has already done. Several of the Morgan Line steamships, among them El Norte, El Rio and El Sud, were built at this yard. Stanton, in his work on "American Steam Vessels," classes them as "among the finest steamships built in America." They range between 4500 and 6000 tons, are built of steel and ply between New York and New Orleans. The company is now completing an ocean steamship of nearly 6000 tons for the Plant Steamship Co., for which we believe the Cramps were unsuccessful competitors.

In connection with the attack made on Newport News on account of its enterprise in underbidding its competitors, the following letter from Mr. C. P. Huntington, who planned and was the principal in carrying out the great enterprise, explains itself:

"In regard to the battleships I beg to say that the Newport News Shipbuilding & Dry-Dock Co. is the lowest bidder for them, and I have no doubt will accordingly secure the contract for their construction, particularly as I believe it is well understood at this time that the Newport News yard is the best in America. If anybody doubts this, I take pride in referring them to the work which the yard has turned out, which proves the claim; and I believe no one knows this better than the honorable Secretary of the Navy, who is familiar with the merits of the different shipbuilding concerns of this country.

"The climate of Newport News possesses very great advantages, as it is not hot in summer nor sufficiently frosty in winter to prevent the working of metal in open air. The labor that we employ in our yard is excellent, and I believe that there is no better in the United States. It is charged that race prejudice exists there, but I must say that this is the first time I have ever heard of it, and the charge is a cruel libel upon the yard, and upon the city of Newport News as well. I hope it will not be repeated, for, as is well known among the employees of the ship-yard, the company requires only two things of those whom it employs—good citizenship and good workmanship—and makes no distinctions whatever in regard to race and creed.

"The question of schools has been referred to by our critics. Let me say that I think we have the best graded school in America for the special education of the children of wage-earners, and it is free.

"What is better than all, our ship-yard is an institution of the old State of Virginia, with whose fortunes many of my enterprises have been identified. She has always accorded me the most fair and liberal treatment, and I have found that life, liberty and property are as safe within the borders of the old Commonwealth as in any other State of the Union.

"I see it is charged that I am resorting to extraordinary measures to sell my ship-yard. This, too, is a pure fabrication, the only thing giving any color to it being the fact that I have been asked by certain parties on the other side of the water to set a price upon the property. As I am always ready to sell anything at a price satisfactory to myself, I told them that I would sell the yard at what it was worth, provided I could be satisfied that the purchasers had the means to carry

on a great yard like this, and that practical ship-builders would manage it in a progressive way, doing only first-class work, as the company has been accustomed to do. I have heard nothing definite from these parties as yet, and very likely I shall not, as there are very few people who would care to invest so great a sum of money as I have put into the plant of the Newport News Shipbuilding & Dry-Dock Co., and I have only to say on this point that, unless I do get its full value, I propose to continue the work of the company under its present owners, and in the quality of that work to satisfy the pride I have always taken in it, and to make it, as it now is, a credit to the State of Virginia and to the whole South, of which it is the only representative in this country in that line of industry."

As the statement made is so distorted, and many of its claims as to facilities, labor, etc., so entirely baseless, the Manufacturers' Record herewith publishes some facts about the Newport News ship-yard which explain why it has been so successful in bidding below competitors. In the first place, it is a modern ship-yard, and second to none in the country. It now employs over 2300 men in the works, and has had about that number on its pay-roll for some time past. Owing to improved machinery and devices for handling material, it can, with the number of men above mentioned, do the work which would require a much larger force in other yards not so equipped. It is also a well-known fact that the organization is a most excellent one, and the work which it has turned out is in evidence on this point. In fact, it has the largest patronage of any ship-yard in America in the line of repair work. The "Paris," of the American Line, was recently put in this dry-dock for extensive repairs, remaining there several days. The steamer "New York," of the same line, was in the dry-dock at Newport News last week, this being the third season in succession that this steamer has repaired at the yard.

A GREAT DREDGE.

A 3000 Horse-Power Machine Being Built Near Baltimore for Improving the Mississippi River.

At a shipbuilding plant near Baltimore is now being constructed what is by far the largest excavating machine in the world for deepening vessel channels, removing earth banks and for similar purposes. It was designed by Mr. L. W. Bates, of Chicago, an engineer who has already become noted in connection with harbor improvements on the Pacific coast and in work on the Mississippi river. He submitted plans at the request of the Mississippi River Commission appointed by the government, and these plans were accepted. In general the apparatus may be described as a suction dredge of enormous capacity. It is to contain in its power and arrangements seven times the force of the most powerful hydraulic dredge heretofore constructed in the United States. These small dredges have proved their capacity and have reached as high as 12,000 cubic yards in twenty-two hours of working time. To meet the problem and conditions as set forth by the Mississippi commission the dredge designed should reach a maximum capacity, under favorable circumstances, of at least 3000 cubic yards per working hour. It has several sets of cutters or knives which are driven into the bank or bar to be removed. These loosen the earth, which is drawn into the suction pipes in liquid form and thence forced wherever it is desired to deposit the matter. A swinging cut may be made from five feet deep to twenty-six

feet deep by the different positions in which the cutters may be fixed. The maximum swinging cut will measure below water level twenty-six feet by five feet five inches by 235 feet, bringing within the reach of the dredge pipes 1400 cubic yards. The minimum width of cut with all cutters in the bank is thirty-six feet; with three cutters in the bank, eighteen feet. The dredge as built has the cutter battery divided into two banks of three each. The cutters are twelve-bladed and of nickel steel, each being sixty inches in diameter. They are driven by compound engines. These engines are reversible, and the cutters also are reversible to increase the life of the wearing parts. The maximum speed of the cutter will be thirty revolutions per minute. An engine controls the raising and lowering of the cutter battery, and the straightway or swinging movements of the dredge. The operator stands in a pilot-house above this engine, into which are led the cutter engine, throttle, brakes, reversing devices to control the six-drum operating engine, and also speaking tubes, whistle ropes, electric bell system, vacuum and pressure gauges upon the suction and discharge pipes, all necessary for the intelligent control of the entire apparatus.

The suction machinery consists of two main centrifugal pumps, each driven by a four-cylinder, triple-expansion engine, directly connected, capable of running up to 200 revolutions per minute. The diameter of the pump discharge is seven feet. The suction pipe of each pump is divided into three pieces each, and connected with the respective cutters of the cutter battery. The discharge of each pump is arranged to emerge from the stern, and is there connected with a system of floating pipes mounted upon steel pontoons, connected all together by short flexible joints of rubber. This double line of pontoons may be directed at any angle of the hull or parallel with it fore or aft.

The dredge machinery is mounted upon a double-bottomed steel hull, measuring forty feet wide by 172 feet long, provided with ballast tanks and compartments, and the double bottom is divided into many cells for further protection. In its working the dredge may be compared to an army of pickaxmen and shovelers with a wheelbarrow gang in attendance. The cutters loosen and prepare the material to be sucked through the individual pipes, then forced through the great tubes, thence out and over the pontoons to the shore. This is one phase of its operation. In another it may be compared to a mighty shovel. As to the capacity of the dredge, its work will be equal to the removal of one foot from an acre of surface hourly. It will literally eat its way, with its 3000 horse-power, through the bars of the Mississippi river, where it is to be placed. What its progress will be no one can say until the test is made. When it goes to the government a test will be made. Probably from five to seven of the dredges will be ordered, that the 1000 miles needing attention may be excavated to insure a channel with from eight to ten feet of water.

The dredge is operated by a crew of seventeen men. It is provided with a towboat tender, equipped with means for snagging, warping lines, handling anchors and towing the dredge as required. With the dredge is a well-equipped blacksmith shop, with lathe and drill press and necessary repairing tools. The great excavator is rapidly nearing completion, and will be ready for trial early in the year of 1896. This dredge is being built by the Maryland Steel Co. at Sparrow's Point.

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RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

ST. LOUIS TO ARANSAS PASS.

A Company Formed to Build a Connection with the Missouri, Kansas & Texas.

A dispatch from Dallas, Texas, announces that a company has been formed, principally of New York and Baltimore capitalists, to build a railroad line from Aransas Pass to Smithville, Texas, where a connection will be made with the Missouri, Kansas & Texas system. The distance is about 145 miles. The company is called the Rockport & Northern, and is to have \$5,000,000 capital stock.

The operations of Baltimore capitalists in Texas are familiar to the readers of the Manufacturers' Record. A company which includes Messrs. Alexander Brown, Walter B. Brooks, Jr., and others has undertaken the work of deepening the entrance from the Gulf of Mexico to Aransas Pass, and the latest report of the engineer in charge shows that since operations were begun a few months ago the depth has increased over six feet. A party consisting of Messrs. Brown and Brooks, James Bond, president of the American Trust Co. of Baltimore; Percy McLaren, a banker of that city, recently visited Texas, and while there the Aransas Pass Terminal Railway Co. was formed, with Messrs. Brown and others as directors. This company will control seven miles of railroad, which will be built to the harbor. The Manufacturers' Record is informed that this road is only a part of the project to develop Aransas Pass as a railroad terminus, and the gentlemen named are to a certain extent connected with the new line. The route is through a section of the State which is almost devoid of transportation facilities. It is one of the best sections of Southeast Texas. As laid out the line from Smithville would be nearly an air line south to the coast. Undoubtedly the Rockport & Northern, when built, will be operated by the Missouri, Kansas & Texas, thus giving the latter system terminals at Galveston and Aransas. It will form a route from Aransas direct to Kansas City, St. Louis and the North.

Another Combination.

A dispatch from Birmingham, Ala., states that the Southern Railway Co. is negotiating with a view of forming a combination with the Illinois Central system, by which the two lines will control the New Orleans & Northeastern, giving the Southern an entrance over it into New Orleans. The readers of the Manufacturers' Record are familiar with the fact that the Southern has had this end in view for some time, and the announcement only confirms what has previously appeared in these columns. The plan as announced is to make a joint purchase with the Illinois Central, both roads having an equal right to operate trains over it. Some time ago the Southern absorbed the Alabama & Great Southern, which is a Northern extension of the New Orleans & Northeastern.

Adding to Its Fleet.

It is stated that about March 1 the Old Dominion Steamship Company will put a new steamer on the line between Norfolk, Old Point and Hampton, Va., to take the place of the present steamer Luray. The new vessel is now being built by the Harlan & Hollingsworth Co. of Wilmington, Del., and will be called the Hampton Roads. She will be a screw steamer and will have about the same ca-

pacity for freight and passengers as has the Luray.

THE SOUTHERN TO TIDEWATER.

The Company Will Begin Train Service to Portsmouth in January, and Operate Steamers to Baltimore.

The Southern Railway Co. is making preparations to extend its operations to Norfolk and Portsmouth, and it is understood that it will begin sending freight and passenger trains to Pinner's Point early in January. The trains will leave the main line at Greensboro, N. C., and go by way of Raleigh to Selma over the North Carolina division; thence over the Wilmington & Weldon division of the Atlantic Coast Line to Tarboro, and from Tarboro to tidewater by way of the Norfolk & Carolina division of the same system. As the number of trains will be very large, these roads have been prepared for heavy traffic, and the Greensboro and Selma section relaid with 70-pound rails. It is understood that at least two express trains will be run each way daily over the new line. Under the old system, Raleigh was practically on a branch of the Southern. The new arrangement will give it another trunk line to the seaboard, and greatly increase its railroad facilities.

The plans for steamship and steamboat lines to operate in connection with the Southern at Norfolk are very elaborate. It will have traffic agreement with the principal lines to New York and the New England ports, while the Norfolk & North American Steam Shipping Co.'s fleet will be a European connection. A steamboat line up the James river is contemplated, as well as one to Baltimore and West Point, Va. Mr. Reuben Foster, general manager of the York River division of the Southern system, informs the Manufacturers' Record that the service on Chesapeake bay will begin simultaneously with the train service to Norfolk. A steamer will leave Norfolk and Portsmouth for Baltimore direct every night, connecting with the Southern train. At first two vessels of the York river fleet will be used. These are well built and powerful boats, and have a large freight-carrying capacity and staterooms for from seventy-five to 100 passengers. About May 1 an additional vessel will be placed on the route. She is now being constructed by the William Cramp & Sons Ship & Engine Building Co., of Philadelphia. She is to be 240 feet long, forty-two feet beam, fifteen feet deep, and to have a speed of fifteen knots an hour. She will be built of steel to the upper deck, be heated by steam and lighted by electricity, and will have accommodations for about 100 passengers, in addition to carrying freight. The engines will be of the triple-expansion type, and auxiliary engines will be installed for hoisting, etc. In design the new boat will be similar to the Baltimore, of the York River Line. The latter service is also to be continued between Baltimore and West Point, Va.

A Proposed Improvement.

The Baltimore & Ohio Railroad Co. has recently made surveys for a branch from its main line to the summit of Maryland Heights at Harper's Ferry, where it is announced the railway company will lay out a park for a summer resort. The improvements, it is stated, contemplate the expenditure of fully \$1,000,000, including a large hotel and considerable landscape gardening; but this is probably too high a figure. The Maryland Heights form one of the most picturesque spots in that country. They face the Potomac river, and from them one can look

into the States of Maryland, Virginia and West Virginia. They have a historical interest, and during the late war formed the scene of several struggles between the rival lines. The place is about ninety-five miles from Baltimore, and will doubtless prove a very popular resort. At the point where the park is proposed the heights are over 1000 feet above the Potomac.

Railroad Notes.

W. T. Corley has been appointed chief engineer of the Tennessee Central road.

W. W. Wilson has been appointed general manager of the Kansas City, Beaumont & Gulf Railway, with headquarters at Beaumont.

Mr. A. B. Farnsworth is appointed general Eastern passenger agent of the Seaboard Air Line, with headquarters at 287 Broadway, New York.

It is reported that Receiver Burke, of the Chattanooga Southern, has placed an order with the United States Car Co., of Anniston, Ala., for 100 new coal cars.

Among the donors to the fund to rebuild the burned University of Virginia at Charlottesville are the Chesapeake & Ohio and the Southern Railway companies.

The Montgomery & Eufaula Railroad has been bought by J. W. Hutchins for Thomas & Ryan, of New York. The price was \$500,000. It will still be included in the Central of Georgia system under the reorganization plan.

The New Orleans & Western Railway Co. announces that it is ready to receive grain and other consignments at its terminals, Port Chalmette, near New Orleans. This is the company whose operations were detailed in the Manufacturers' Record several weeks ago.

The road running into Mercer county, W. Va., from a point on Paint creek has been chartered as the Kanawha & Paint Creek Co., with W. S. Edwards, of Charleston, W. Va., and others as directors. It is entitled the Kanawha & Paint Creek.

A dispatch from Harrisonburg, Va., states that Pendleton county, W. Va., has voted \$50,000 in bonds to secure the construction through that county of the Chesapeake & Western Railroad, and that in addition to this a half-interest in 40,000 acres of mineral land and free right of way have also been given by individual property-owners in the county.

A dispatch from Galveston, Texas, states that at a regular meeting of the board of directors of the Texas City Improvement Co. all arrangements were completed for letting the contract to complete the channel from Bolvar Channel to Texas City to a depth of sixteen feet. J. R. Meyer, vice-president and general manager, was authorized to let the contract to one or more responsible contractors, so that the work might be completed by the early spring. Over \$1,000,000 worth of cotton and other products have been shipped from Texas City this season.

Among the large vessels now trading to the port of New Orleans the following are reported: The British steamship Samoa cleared for Havre on the 2d inst., by A. K. Miller & Co., with 17,224 bales of cotton, 6499 sacks of cottonseed meal and 54,840 pieces of staves; the British steamer Iksal, for Bremen, carried out 13,972 bales of cotton, and the British steamer American, plying between New Orleans and Liverpool, cleared with a cargo consisting of 15,840 bales of cotton, 131,468 bushels of corn, 12,300 feet of oak lumber, 65,800 pounds of cottonseed, 7794 sacks of cottonseed meal, 5970 oak staves and other merchandise.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Opening and Picking Cotton.

Lowell, Mass., November 25.
Editor Manufacturers' Record:

Having at some length described the growth and preparing of cotton for the processes of picking, there has not been attention enough given to the picking department, and for that reason a very poor grade of carding has been the result.

Since the manufacturers of the United States have turned their attention to the revolving flat card it has been ascertained that a better grade of picking must be adopted in order to secure an even grade of carding. Manufacturers were forced to do this by reason of existing circumstances. The revolving flat card has to stand on its own bottom, from the fact that there is no system for regulating the work from the time that it leaves the coiler only as it passes through the drawing-frames.

Formerly the carding passed through a railway-head system, as will be shown later on. This system very materially evened up any light or heavy grist passing through the rolls. This, I am quite sure, is why manufacturers neglected one of the most important departments of a cotton factory. No mill can ever be successful unless it starts its work right at the processes of opening and picking. It is the poorest kind of an argument to say that the railway doubling and drawing-frames will even up the work as it comes from the carding. What we need, and what many of our manufacturers are beginning to realize, is a system of picking that will be uniform in weight. I mean more than to have it weigh forty pounds per lap. An even picker-lap is formulated so that it will weigh even foot by foot and yard by yard.

Here, for instance, we see a set of finisher picker-laps weighed before they are sent to the cardroom. Now, these laps weigh comparatively even, so far as the pounds are concerned; that is to say, the standard weight is forty pounds, and they will run lap after lap with only a variation of one-half pound. In fact, any lap showing more unevenness than this will have to be worked over again.

Well, now, let us see how the carding will appear with this grade of lap. We should naturally suppose that the sliver, yard per yard, would weigh quite close to the standard. The cards have been drafted to deliver a coil of carded sliver weighing sixty-five grains per yard, and if the lap is uniform inch per inch, then we shall secure just what the card was drafted for; but such we find is not the case. What is the cause of one yard weighing sixty-five grains, and then run down to sixty-three, sixty-two, sixty, fifty-nine grains, and then begin to weigh heavy, gradually running up to sixty-eight grains. The average may be all right, so far as the draft of the cards were designed to deliver, but this is not what we consider even work, and it only goes to show that while the weight of the whole lap would indicate an even disposal of the cotton during the formation of the lap, such was not the case. The carding would indicate that there was a constant fluctuation of draft in the pickers, thus very seriously affecting the even formation of cotton as it passed from the action of feed-rolls and beater-blades to the condensing cages beyond. This, I think, brings us to one of the essential points of preparing the cotton for the intermediate and finisher pickers.

Having discussed what I consider the

first principle of treatment of cotton fibres, I will pass to notice the second principle, that is, the science of picking. I am well convinced that the science of picking is one of the essentials that should not be neglected. In order to get the very best results, a careful study must be made covering all the salient points. In the first place, the structure of the openers and pickers must be based on a correct principle, if we expect to get good even laps. This will require a most thorough knowledge on the part of those whose business it is to draft and build these machines. It is not enough to know how to put these machines together in a substantial manner, but a most scientific knowledge will be essential in placing the several parts of the machine so that a correct system of drafts and speeds will form the cotton into an even lap.

This, I think, brings us to the point of discussion as to what system of picking is the best. There are several systems in use at the present time, but the one that I desire to make special mention of at the present time is that of the Kitson Machine Co., of Lowell, Mass. This machine company is too well known throughout the manufacturing centres of the United States to require any introduction, but I will simply say that for forty years it has been building lapers and pickers.

From small beginnings the plant has been enlarged to such an extent that it ranks as the largest in the country, while the patronage has kept pace with the improved methods applied to its machines. The management feels justified in continuing the trunk system, believing, as they do from a practical experience of many years, that it is the very best. As I am to treat the revolving-card system later on, I will confine my remarks to the Kitson Company's system of making its picker laps for this grade of carding.

The first machine is the automatic feeder, attached to a one-beater opener, that breaks up the cotton, after which it is carried by a strong draft of air through a system of trunks a distance of 300 feet, where it drops into a receptacle in a thoroughly broken mass of cotton, when it is fed automatically through a set of feed-rolls, receiving the blows of a three-armed beater running at a speed of 1200 revolutions per minute, when by a strong current of air it is thrown forward into the cylinder cages, after which it is compressed and formed into a 40-inch opener lap. Next comes the intermediate picker. This consists of one three-armed beater, driven at a speed of from 1400 to 1500 revolutions per minute, doubling four laps into one. The last machine is a three-arm beater finisher picker, doubling four laps into one product of 2500 pounds finisher laps per day.

On the intermediate picker the beater-blades are set three-sixteenths of an inch from the feed-rolls. On the finisher picker one-eighth of an inch bars are set three-eighths of an inch under beater-blades. The speed of fans is very nicely calculated, so that the seeds, shell-motes and foreign substances can be separated, thus leaving the picked cotton in prime condition for the processes of carding.

The formation of an even finisher picker lap is absolutely necessary if we expect to get a good uniform card sliver. As previously stated, the theory that an uneven picker lap can be evened up in the process of carding and doubling is a pernicious one, and I find that the tide is turning from the fact that very many of our millmen are giving their attention more particularly to the formation of an even picker lap. Now, I have held tenaciously to this point: Formulate even picker laps, and even carding will be the

result if the cards are in condition to card cotton fibres.

We look at a finisher lap as it is sprung from the machine and say that from outward appearances it indicates that it is even, but when we come to examine it as it is unrolled it is found to be full of uneven places, first thick and thin spots, not very large, but of such dimensions as will produce cloudy carding, consequently variations in weight of card slivers. Now, in order to avoid this in a measure and form an even grade of picker laps, the Kitson Machine Co. has placed in its finisher pickers an improved beater called the Kirschner carding beater.

All modern-built pickers consist of three arms, with sharp-edged blades extending the length of the beater, and set, as previously stated, three-sixteenths of an inch and one-eighth from the feed-rolls, so that when the mass of cotton presents itself by the action of the feed-rolls it is beat off by the force of the blades. This system has never been satisfactory, from the fact that small flakes of cotton were constantly being forced from the bite of the feed-rolls and so passed on to the cylinder cages. Now, with the Kirschner beater, instead of the sharp blades there are fastened to the beater arms a hardwood lagging set with steel pins polished to a point, set at an angle with some twelve per square inch. These beaters are driven at a speed of 1500 revolutions per minute, and when at full speed the cotton is combed from the feed-rolls in a light fluffy form, as compared to the action of the three-bladed beater.

The above formula for picking cotton is without any doubt one of the most perfect now being placed in the mills North or South, and still I am of the opinion that we make a serious mistake at the beginning that no amount of improvements on the pickers will be able to overcome. What I have special reference to is the method of opening the cotton from the bale. While in the South I visited a large mill that was nearly ready to be started up. All the appointments about the mill were of the latest improved patterns, including the Kitson trunk system, with openers and pickers. I found, on careful inspection, that while the arrangement for opening cotton was an improvement over very many of the mills of New England, still the one needed improvement was wanting.

I want to enter a protest against the pernicious method of opening bales of cotton that is in use almost universally throughout the United States. Now, let me say that just as long as one or two men are allowed to throw a bale of cotton in the form of heavy flakes into a pile, and from that into an automatic opener, we shall get uneven grades of carding, and no amount of doubling will even up the roving which is essential for even and strong yarn. Let us take a look at this process of opening cotton that is so prevalent both North and South. Cotton, as is well known, comes to the consumer in a compressed form, weighing anywhere from 400 to 500 pounds. When opened by the men employed to do that work they commence by pulling it apart to a limited extent in the form of hard flakes weighing from one to twenty pounds. The cotton in this form is thrown into the hopper of the automatic feeder, where, by the action of an endless apron full of sharp steel pins, it is carried up at a distance of three or four feet, when it comes in contact with another endless apron full of sharp pins, which forces back into the hopper all that the pins of the first apron will not hold. The lumps of cotton that the teeth of the first apron holds onto are carried over and dropped down to the feed-rolls, when they are

seized hold of and presented to the blades of the beaters.

Now, this is the very point that I wish to emphasize as injurious. No set of pickers can properly handle cotton that comes to them in this condition. I am aware that great stress is laid on the improved methods of picking cotton, especially that of the automatic feeder. The claim is made that the action of the endless apron on the flakes of cotton breaks them to pieces, besides saving labor. Now, I have not a word to say about this machine. I am of the opinion that it is an improvement, but I am not yet convinced that it does the work on cotton that ought to be done to it. Cotton should be thoroughly opened before it is ever fed to any set of picker machines. What I mean is, to have it pass through a machine that is made specially for the purpose of loosening up these flakes of cotton as they are removed from the bales of cotton. Some bales of cotton are matted together so hard that it will require a severe thrashing to disentangle the mass of compressed fibres. The automatic feeder never ought to be expected to do this work; in fact, it never can with satisfactory results.

F. E. SAUNDERS.

A Railroad Officer Suggests How Cotton Should Be Handled.

Augusta Southern Railroad,
Augusta, Ga., December 7.
Editor Manufacturers' Record:

I have been a constant reader of your valuable paper, the Manufacturers' Record, for ten years, and believe that to your untiring work in advertising the South's advantages is due in great measure its increase in manufacturing enterprises the last few years. Your vigorous efforts to impress the fact that the South is the place for the manufacture of cotton is bearing fruit. In ante-bellum days the South was, to a large extent, content to let the North and England manufacture, while we produced the raw material. This condition of affairs might have continued, but a wise Providence willed otherwise. The present generation of the South begin to realize the importance of manufacturing, and I predict that some of this generation will live to see an entire revolution in the cotton industry, with the South absolute master of the situation in all of its branches. In studying the situation along the line of my railroad, the Augusta Southern, which runs through one of the best agricultural sections of Georgia, I have reached the conclusion that the old-time way of handling cotton is entirely too expensive, and that it can be and will be radically changed in such a way as to save a vast sum to the farmer. While at first the railroads may lose some freight, the increased prosperity of the country will soon make up more than this loss. I unhesitatingly say the time has come when cotton should be shipped to the mills just as it is picked from the field. This can be done in bulk in the present style of car, but if necessity suggest better cars they will be built. Anyone can see at a glance that the farmer will save by this mode of marketing his crop the cost of his bagging and ties, and also the freight on them. There will also be a great saving in time and hauling to gin, and afterwards the baled cotton and seed to railroad. This change, I believe, will be the result of the value as a marketable product of cottonseed, which is yearly growing more important. No cottonseed-oil mills have ever been erected in New England, nor will they be. It is simply a question of time when all mills in the South will be so constructed as to receive the cotton in bulk as picked and put it through a gin, the lint being taken to the spindles and looms and made

into cloth, the seed into the oil mill and the oil extracted, the hulls baled and the meal put into cakes. Thus the entire product will be prepared for market at a great saving, and by one company. Can anyone doubt that this will be the mode of utilizing our greatest product? None who study the question will. One or two mills such as thus described are now in successful operation, and others are being erected. These mills are necessarily small now, because only the cotton grown in their vicinity can be utilized, as our farmers and railroads have not as yet adopted the plan of shipment in bulk, which will inevitably be the case in future. Does it take an optimist to see the future greatness of the South, and its absolute control of its most valuable product, cotton?

JAMES U. JACKSON, President.

A \$600,000 Mill

The big mill recently noted as to be erected in the South by Northern capital, represented by David Trainer, of Fort Mill, S. C., and J. N. Trainer, of Chester, Pa., has been located, so it is reported, in Rome, Ga. Mr. David Trainer has, it is claimed, completed negotiations for a site, and an architect has been instructed to inspect the site preparatory to drawing plans. This plant, as proposed, is to contain 30,000 spindles and 1000 looms, and will require an expenditure of \$600,000. The parties interested are all experienced cotton-mill men, being connected with factories in different parts of the country.

Mr. David Trainer telegraphs the Manufacturers' Record from Rome, Ga., under date of December 12, as follows:

"Rome has been selected as the location for the mill. We will erect a mill for 30,000 spindles and 1000 looms. I will have entire charge. A local president will be elected. Rome subscribed \$50,000."

The Cotton Crop Figures.

The cotton crop report of the Agricultural Department puts the yield as equal to 67.3 per cent. of last year's, or 6,375,000 bales, as indicated in final returns from county and State correspondents. Mean farm price, 7.59 cents, a gain of 65 per cent. on last year's figures, 4.6, and of 9 per cent. on 1893. Returns from correspondents are almost uniformly unfavorable as to quantity, the weather having proved generally disastrous.

Textile Notes.

Mr. Jas. L. Logan, 412 Temple Court, Atlanta, Ga., wants to correspond with hosiery commission men.

The Chattanooga Knitting Mills will be equipped at Chattanooga, Tenn. Office now located in the Times Building, Room 63.

Mr. W. D. Craig, of Chesterfield, Va., has purchased equipment for a knitting mill, and will at once erect same and commence operations. Water is to furnish the power.

The W. J. Hooper Manufacturing Co., of Mountain Island, N. C., manufacturers of seines and kindred goods, will erect a new mill in 1896. Mr. W. T. Jordan is manager.

It is proposed to establish a bleachery at Fayetteville, N. C., and the enterprise will be backed by ample capital. The waters from the various streams in the neighborhood of Fayetteville have been tested and reported perfectly pure and fit for bleaching purposes.

The Atlanta Hosiery Mills, of Atlanta, Ga., has applied for charter and will establish a plant of twenty-five machines to start with. The incorporators are James L. Logan, Chas. S. Kingsbury, Jacob

Haas, A. W. Cockerton and others, and the office is at 412 Temple court.

The movement for a mill at Fayetteville, N. C., is quite successful, about \$50,000 having already been subscribed. Temporary organization has been effected with W. S. Cook, G. E. Ijams, J. A. McLaughlin, E. A. Poe and others as directors. C. W. Bidgood is secretary.

Baltimore and the South.

In honor of "Maryland Day" at Atlanta the Manufacturers' Record has issued a special edition, which it appropriately describes as a Baltimore supplement, and which is designed "partly to show the close business relations between Baltimore and the South and partly to emphasize the importance of the Baltimore 1897 exposition." The edition contains an imposing array of special contributors, including Hon. Hoke Smith, Secretary of the Interior; Hon. William L. Wilson, Postmaster-General; Hon. Hilary A. Herbert, Secretary of the Navy; Dr. C. W. Dabney, Assistant Secretary of Agriculture; Hon. John R. Procter, president United States civil-service commission; Hon. W. Y. Atkinson, Governor of Georgia; Hon. W. J. Northen, ex-Governor of Georgia; Hon. Porter King, mayor of Atlanta; Mr. C. A. Collier, president Atlanta Exposition; Mr. Samuel M. Inman, chairman finance committee, Atlanta Exposition; Gen. L. W. Avery, commissioner Atlanta Exposition to South American countries; Mr. Clark Howell, editor of the Atlanta Constitution, and Mr. F. H. Richardson, editor of the Atlanta Journal. Mr. Smith and other federal officials included in this list point out the important influence which the proposed Baltimore exposition will exercise upon the business development of the South and of this city, while Governor Atkinson and other contributors from that State tell "what Georgia thinks of Baltimore." In addition to these papers, the special edition of the Record contains a number of interesting and carefully prepared articles, which make an admirable presentation of the industrial position and possibilities of this city. Taken altogether, the "Baltimore supplement" of the Record makes an excellent showing, both for itself and for the chief city of the State, and should prove of great assistance in promoting the success of our projected exposition and in strengthening the bonds of commercial union between Baltimore and the South.—*Baltimore Sun.*

According to the city census, just completed, the population of Jacksonville, Fla., is 25,130, a gain of 7920 during the last five years, and only 1522 less than the gain for the entire decade between 1880 and 1890. As a matter of fact, the gain during the last five years has probably been greater than that during the preceding ten, as a large part of the increase between 1880 and 1890—probably as much as 2000—came from the extension of the city limits. The increase of the last five years indicates for the city a population of about 36,500 by 1900.

Messrs. Hopkins, Dwight & Co. report the market for cottonseed-oil products quiet but firm on the 7th inst. Buyers were not bidding over 29 cents for prime summer yellow oil, and old oil was neglected. There was no inquiry for butter oil. Loose crude was firmly held at 21 to 22 cents. Quotations ranged as follows: Prime summer white oil, 32 to 33 cents; butter oil nominal at 30 to 31 cents; prime summer yellow, new, 29 to 29½ cents; off summer yellow, 27½ to 28½ cents; prime crude, 26 to 26½ cents, and prime crude loose, 21 to 22 cents.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

The Market for Cottonseed Products.

New York, December 10. A slow demand, with well-maintained values, are the leading features of the cotton-oil market. The controlling conditions of the industry are practically unaltered. With prime yellow at 29½ cents, the demand for export is of an unusually slow character, while the weakening lard market adds its quota to the adverse situation. With ample oil-storage facilities, by reason of the short seed supply, and imbued with the faith that the near future will witness still higher values, the manufacturers are practically a unit in their attitude with regard to release of oil stocks below current figures. It is difficult to understand how the packers can profitably handle cotton oil, with lard almost reduced to a parity in value. Lard is quoted today at 5.60 cents, while Chicago lard, May, is offered at 5.57 cents. However, these undesirable conditions cannot possibly prevail for an extended period, although, in which event, lard would not prove the key to the situation. Fortunately, cotton oil is not dependent solely on a single manufacturing or allied industry, as its diversified use now finds many distributing channels, which will develop as time proceeds. In locations favorably situated for the transit of oil, manufacturers have increased their bids for seed; nevertheless the response has been far from satisfactory, the material being frequently diverted to fertilizing purposes preferably. In districts remote from transportation facilities, the latter condition predominates. Butter oil is neglected, while crude in barrels, for which there is a good demand, is scarce, and quoted at 26½ cents. The following are current quotations: Prime white oil, 32 to 33 cents; butter oil, nominal, 30 to 31 cents; prime summer yellow, 29 to 29½ cents; off summer yellow, 27½ to 28½ cents; prime crude, 26 to 26½ cents; prime bulk crude, 21 to 22 cents, and soap stock, 1 cent per pound. Plenteous seed supplies are reported from Egypt, destined for English mills, a circumstance which will enable them to undersell American oil in the markets of Southern Europe. The superiority of the latter as an edible product will, however, to a greater or less extent secure recognition, even under the most disadvantageous circumstances. Prime yellow has been disposed of in a limited manner at 30 cents, January delivery. Local refiners have been credited with the purchase of several tanks of crude at 21 cents, while Chicago secured tanked crude to the extent of 40,000 gallons at 21 to 22½ cents, chiefly from Memphis and Texas. Sales reported for the week aggregate 595 barrels crude at 25½ to 26 cents; 790 barrels prime yellow at 29½ to 29½ cents, and 850 barrels off-grade yellow at 27½ to 28½ cents. Exports for the week reach the total of 2750 barrels, the greater part of which was consigned to Holland, France and England, as well as Italy, being practically out of the market. Receipts aggregate 7000 barrels; stocks accumulating.

Cake and Meal.—The export demand continues unabated, while home consumption of both products at advancing figures is satisfactorily proceeding. The ruling prices for oil cakes in the foreign markets are, however, at this time below the average of preceding fall seasons. Arrivals of American cake are, nevertheless,

speedily disposed of, increased values being expected on the near approach of wintry weather. Cake on the Liverpool market is quoted at £5 5s. to £5 7s. 6d. per ton; English undecorticated cake £3 15s. per ton, and American linseed cake £5 to £5 2s. 6d. per ton. Nearly 3000 tons cake and meal were shipped from New Orleans, chiefly to England. Cake quotations per long ton, \$18 to \$18.25 for export, New Orleans.

Cottonseed-Oil Notes.

The steamship Pio IX cleared from New Orleans last week for Liverpool with 2251 sacks of cottonseed meal and 899 sacks of cottonseed cake, with other merchandise.

The British steamship Ramore Head was cleared from Brunswick, Ga., last week by the Brunswick Terminal Co. for Liverpool with a cargo valued at \$385,875. Among her cargo she carried out 315 tons of cottonseed.

There is in contemplation the erection of a cottonseed-oil mill at Heidelberg, Miss., a town four miles south of Vicksburg. A meeting of the citizens was held last week, and a committee appointed to solicit subscriptions to the stock, which is placed at \$10,000, in shares of \$10 each. It is stated that \$8000 of the stock has been already subscribed.

Cottonseed products in Memphis are steady at the following quotations: Oil, off crude, 21 cents; prime crude, 22 cents; prime summer yellow, 26 cents; off summer yellow, 24 cents; choice cooking summer yellow, 30 cents; cottonseed meal, \$15.50 to \$16.50 per ton; cottonseed in bulk brings \$9 to \$10 a ton by rail and wagon, and sack seed by river \$8 to \$9 per ton.

Messrs. Lawler & Charey, of New Orleans, have about completed the erection of a cottonseed-oil mill in that city. The mill will have a capacity of thirty tons per day and can be raised to sixty tons at any time. The owners of the mill expect to sell direct to dairy farmers from 50 to 75 per cent. of their cake, seed and hulls. The plant when completed will represent an investment of over \$50,000.

The market for cottonseed products on the 6th inst. closed quiet, with prime crude oil in bulk, 22 cents; yellow, 27 cents in barrels; meal and cake, \$19 per long ton for immediate delivery. Receivers' prices are as follows: Cottonseed, \$10 to \$10.50 per ton (2000 pounds) delivered net to the mills; cottonseed meal jobbing at depot, \$17.50 to \$18 per short ton, \$18.75 per long ton for export f. o. b.; cottonseed oil, 23½ to 24 cents per gallon for strictly prime crude; in bulk, 21 cents, and 25½ to 26 cents for refined oil at wholesale or for shipment; oilcake, \$19 per long ton f. o. b.; foots, 1 to 1½ cents; linters, 3½ to 4½ cents, according to style and staple; hulls, delivered at 30 cents per 100 pounds, according to location of mills.

The local market for cottonseed products at Houston, Texas, during the week ending the 6th inst. has been very steady in tone. Nearly all grades of oil have advanced a fraction. Meal and cake remain at the recent decline, but hulls are \$1 per ton higher than last week. The following quotations were posted on the 6th inst. by the cottonseed-product department of the Houston Cotton Exchange and Board of Trade: Choice crude oil for butter oil, 21 to 21½ cents; strictly prime crude oil and prime crude, 21 cents; prime butter oil in barrels, 28 to 29 cents; prime summer yellow oil, 23 to 23½ cents; prime cottonseed cake and meal, \$12.50 to \$14 f. o. b. mill at interior points, according to location; cottonseed hulls, \$4 to \$4.50; linters—A, 4½ cents.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record.
Baltimore, Md., December 12.

The phosphate market is reported steady, with business showing very little change as to volume. No movement of importance is expected until after the new year. The situation at points of production remains unchanged. In South Carolina both land and river miners are pushing their work vigorously, and there is a good demand for rock from both foreign and domestic sources. The market at Charleston closes steady at \$3 for crude phosphate rock, \$3.25 for hot-air-dried and \$5 for ground rock, all f. o. b. The work of development among Florida miners is beginning to assume greater proportions, and those plants which are actively engaged are doing good work. Prices still continue nominally steady at 8 to 8½ cents a unit for land pebble delivered at Eastern ports. Land rock is steady at 6½d., and pebble at 5d. for foreign ports. There are no local charters reported during the past week, but several vessels have been taken to load phosphate at Florida and South Carolina ports. There was very little demand for steam tonnage in New York during the past week, but business in berth freights was more active at the close. The phosphate charters reported were as follows: A British bark, 1515 tons, from Coosaw to London, Hull or Tynemouth with phosphate at 13s. 6d., chartered abroad; a British steamer, 1923 tons, from a Southern port to United Kingdom or Continent with phosphate on private terms, chartered abroad; a British steamer, 1027 tons, from Fernandina to United Kingdom or Continent with phosphate on private terms, chartered abroad, and a British steamer, 1095 tons, from Tampa to London with phosphate at 18s., January, chartered abroad.

Fertilizer Ingredients.

There has been a shade more activity in the general market during the past week, and considerable material has been moved, owing mainly to the late cut in freights East and South. The stock of blood and tankage is somewhat reduced, and the market is steady. There is very little spot business doing, as usual at this season of the year. Nitrate of soda is a shade easier in New York, with spot lots quoted \$1.77½. Forward shipments were quoted \$1.72½ to \$1.77½, as to position.

The following table represents the prices current at this date:

Sulphate of ammonia, gas.....	\$2 50d	—
Sulphate of ammonia, bone....	2 50d	—
Nitrate of soda.....	1 85d	1 90
Hoof meal.....	1 80d	—
Blood.....	1 85d	1 90
Azotine (beef).....	1 80d	—
Azotine (pork).....	1 85d	—
Tankage (concentrated).....	1 80d	—
Tankage (9 and 20).....	1 50 and 10	—
Tankage (7 and 30).....	17 00d	17 50
Fish (dry).....	20 50d	—
Fish (acid).....	15 00d	—

Phosphate and Fertilizer Notes.

The steamship Pembroke sailed from Savannah, Ga., last week with 1605 tons of phosphate rock for Hamburg.

The British steamship Marie is due to arrive at Fernandina, Fla., this week for a cargo of phosphate rock for Germany.

The British steamship Bengore Head cleared from Fernandina, Fla., last week for Liverpool with a cargo of 1000 tons of phosphate rock for H. F. Dutton & Co.

It is estimated that the total receipts from the sale of fertilizer tags in North Carolina this year is 35 per cent. less than for the fiscal year of 1894. This autumn the receipts are \$700 more than they were a year ago for the fall trade.

It is reported that the Globe Phosphate Co., of Columbia, S. C., has leased its en-

tire plant to a party of Richmond (Va.) fertilizer manufacturers, who will soon take charge of the property and operate it. The plant is thoroughly equipped with the latest machinery and devices for turning out a large output. Dr. W. T. C. Bates is president of the company, and Dr. T. C. Robertson is the superintendent and general manager.

The shipments of phosphate rock from the port of Charleston, S. C., for the week ending the 6th inst. were as follows: Schooners Warner Moore for Richmond, Va., 650 tons; barkentine Nineveh for Norfolk, Va., 700 tons, and Rillie S. Derby, 610 tons, and Edward G. Hight, 800 tons, for Baltimore. The total shipments of phosphate rock since September 1 to domestic ports amount to 23,463 tons, against 23,827 tons for the corresponding period last year.

Messrs. J. M. Lang & Co. report the following shipments of phosphate rock through the port of Savannah, Ga., for the month of November: Steamship Hathor for Bremen, with 1673 tons; steamship Tergiste for Venice, 1396 tons; steamship Cape Comorin for Hamburg, 999 tons, by B. Arentz & Co.; steamship Greatham for Genoa, 1221 tons; steamship Tynchehead for St. Louis de Rhone, 1444 tons; steamship Istria for Venice, 1350 tons; steamship Norfolk for Port de Bouc, 1103 tons, and steamship Dora for Genoa with 1390 tons, by the Anglo-Continental Guano Works—total for the month, 10,556 tons.

Iron Markets.

Cincinnati, December 7.

Considerable business has been done during the week, though principally in small lots and carloads. An unusual amount of figuring has been going on among buyers, "almost persuaded" that now is a favored time in which to contract for future wants, and many of these negotiations are crystallizing into orders, though at prices somewhat under those of ten days ago, but the large majority, realizing that the old axiom that "iron is the barometer of trade" signally failed this year, have little confidence in the market, and have decided to await developments. The general market is heavy and irregular in consequence, a fact patent to all interested. Pessimists and bears think prosperity has stone bruises on both heels and cannot get here at all, but pig-iron makers claim that some panaceas are near at hand in the form of an able patriotic Congress, and very low stocks of raw iron, both at furnace and at the yards of consumers.

There are indications that the concessions made by some of the Southern furnaces during the past fortnight will not be repeated in the near future. The principal makers in the Alabama district have reaffirmed their schedule of August 30, and owing to their very meagre stocks purpose maintaining it.

The month of December may continue the history of its first week, though a larger buying will in all probability mark the latter part of the month.

We quote for cash f. o. b. docks Cincinnati:

Southern coke No. 1 foundry.....	\$13 00d
Southern coke No. 2 foundry.....	12 75d
No. 1 soft.....	13 00d
Lake Superior coke No. 1.....	14 50d
Lake Superior coke No. 2.....	14 00d
Hanging Rock charcoal No. 1.....	16 00d
Tennessee charcoal No. 1.....	14 00d
Jackson county silvery No. 1.....	14 00d
Southern coke, gray forge.....	12 50d
Southern coke, mottled.....	12 25d
Standard Alabama car-wheel.....	15 75d
Tennessee car-wheel.....	14 50d
Lake Superior car-wheel & mall'e.....	16 50d

We quote for cash f. o. b. St. Louis:

Southern coke No. 1.....	\$13 50d	\$13 75
Southern coke No. 2.....	13 25d	13 50
Southern coke No. 3.....	13 00d	13 25
Southern gray forge.....	13 00d	13 25
Southern charcoal No. 1.....	14 50d	15 00
Ohio softeners.....	16 00d	16 00
Lake Superior car-wheel.....	10 00d	17 50
Southern car-wheel.....	16 50d	17 00
Genuine Connellsburg coke.....	—	5 45
West Virginia coke.....	—	5 00

We quote for cash f. o. b. Chicago:

Lake Superior coke No. 1 fdy.....	\$15 00d	\$15 50
Lake Superior coke No. 2 fdy.....	14 00d	14 50
Lake Sup. charcoal Nos. 1 to 6.....	16 00d	—
Ohio Scotch No. 1.....	16 00d	16 50
Jackson Co., O., silvery No. 1.....	15 50d	16 00
Alabama silvery No. 1.....	15 00d	15 50
Spalite.....	14 50d	15 00
Southern coke No. 1.....	14 25d	14 50
Southern coke No. 2.....	14 00d	14 25
Southern coke No. 3.....	13 60d	—

Buffalo, December 7.

The pig-iron market in this section continues to show a quiet surface, although it is evident it is being watched with much interest by both buyers and sellers.

The fluctuation of Bessemer pig has some influence on prices of foundry iron. This, coupled with some desirable contracts which have been on the carpet this past week, developed some bidding which slightly shaded local prices for current business. We revise our figures to the following basis, cash f. o. b. cars Buffalo:

No. 1 foundry strong coke iron.....	—	61 14 50
No. 2 foundry strong coke iron.....	—	61 14 00
Lake Superior ore.....	—	61 14 00
Ohio strong softener No. 1.....	816 25d	16 75
Ohio strong softener No. 2.....	15 25d	15 75
Jackson county silvery No. 1.....	16 25d	17 00
Southern soft No. 1.....	15 15d	15 05
Southern soft No. 2.....	14 65d	15 05
Hanging Rock charcoal.....	—	18 50
Lake Superior charcoal.....	—	16 75

New York, December 7.

The stand-off between buyers and sellers of iron continues. December is generally a light month in sales, because of the usual custom of running stocks low prior to inventory. This year there is the added inducement of buying to break down prices in a contest of strength with producers. The umpire in the contest is general business, and he will render his decision early in the new year. Meanwhile a majority of furnaces have plenty of unfilled contracts to work on. The few that do not are cutting prices more or less, to fill up their order books. The drop in Bessemer and the dullness in foundry irons is a dampener on the few remaining furnaces, North and South, that were making preparations to go in. Indeed, the margin is so close for some of those that have started, that a further decline will raise awkward problems.

The business outlook, viewed from this centre, is better than a month ago. The Calif. scare, the war scare, the assembling of Congress and the gold exports have ceased to alarm. The balance of trade is for the time in our favor, and the gold movement will not continue long. There is confidence that whatever financial legislation a Republican Congress and President Cleveland may unite upon will be conservative and helpful. Nevertheless the prevailing temper is hesitative. There is an absence of speculative spirit, not only on the exchanges, but all through the range of business.

We quote for cash f. o. b. docks New York:

No. 1 X standard Southern.....	\$14 00d	\$14 25
No. 1 X choice Virginia, such as Shenandoah.....	14 00d	14 25
No. 2 X Alabama or Virginia.....	13 50d	13 75
No. 1 soft Ala. or Virginia.....	13 50d	14 00
No. 1 X lake ore coke iron.....	16 25d	16 50
No. 2 X lake ore coke iron.....	15 75d	16 00
Lake Superior charcoal.....	17 00d	17 25

We quote for cash f. o. b. Philadelphia docks:

No. 1 X standard Alabama.....	\$14 00d	\$14 25
No. 2 X standard Alabama.....	13 50d	13 75
No. 1 X standard Virginia.....	14 00d	14 25
No. 2 X standard Virginia.....	13 50d	13 75
No. 1 X Alabama or Virginia.....	13 75d	14 00
No. 1 X lake ore coke iron.....	16 25d	16 50
No. 2 X lake ore coke iron.....	15 75d	16 00
Lake Superior charcoal.....	17 00d	17 25

ROGERS, BROWN & CO.

Davis & Harrington is the style of a new cotton firm located at West Point, Ga. They are doing a large Eastern and foreign business.

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the Manufacturers' Record. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

FINANCIAL NEWS.

New Corporations.

A. M. Hunt, E. C. Hale and others have incorporated the Farmers' Bank of Clarksdale, Mo., with \$10,000 capital.

Orville Groves, A. G. Wilson and others have incorporated the Bank of Maitland at Maitland, Mo., with \$25,000 capital.

The Mutual Benefit Savings and Loan Association of Cameron, Mo., with capital stock \$250,000, has been filed. Incorporators are E. F. Coberly, A. J. Alt-house, W. F. Clark and others.

Application for a charter incorporating the West Point State Bank has been filed, and the new bank will soon open its doors. The capital will be \$50,000. A number of the business men of the city are connected with the new institution.

A charter has been granted incorporating the West Point (Ga.) Building and Loan Association. The following gentlemen are among the incorporators: Thos. A. Davis, J. S. Baker, N. L. Atkinson, H. H. Smith, J. S. Horsley, J. J. Crawford, I. M. Scott and R. A. S. Freeman.

New Securities.

The town of Dayton, Tenn., has decided to issue \$50,000 in bonds for improvements. Alderman J. F. Dean may be addressed.

Pendleton county, W. Va., has voted to issue \$50,000 in bonds for railroad construction purposes. The county treasurer may be addressed at Franklin.

Interest and Dividends.

The semi-annual dividend of 3 per cent. on the paid-up stock of the Alabama Home Building and Loan Association will be paid on January 1 at the Manufacturers' National Bank of Baltimore.

The Bank of Warrenton, Ga., has declared an annual dividend of 8 per cent., in addition to adding 5 per cent. to its surplus from its profits. The board of directors re-elected were as follows: W. S. Witham, E. B. Farmer, M. R. Hall, Jas. Whitehead, J. A. Allen, W. J. Norris and S. L. Patillo, with W. S. Witham, president; E. B. Farmer, vice-president, and J. A. Allen, cashier.

Financial Notes.

The ninth annual report of the Ocala Building and Loan Association shows that the association has accumulated a capital of over \$200,000, and in that time had only lost \$1315.25. The following officers have been elected: President, R. B. McConnell; vice-president, C. L. Bittinger; secretary and treasurer, G. S. Scott.

Georgia and Alabama Bauxite.

Mr. Alfred E. Hunt, president of the Pittsburg Reduction Co., which is probably the largest manufacturer of aluminum in the country, has recently been in North Georgia looking over the bauxite properties owned by his company. Considerable bauxite property in Floyd county, Georgia, is owned by this company, and the ore is now shipped to the Pittsburg works. Mr. Hunt, in an interview with the Rome Tribune, said: "I can state without reservation that you have the finest bauxite in the world. I have recently returned from Europe, where I examined the best known bauxite deposits, and there is not the slightest doubt about your having the advantage in a number of ways."

This bauxite extends through a belt of country in North Georgia and Alabama, which is rich in mineral resources and which is destined to be a great manufacturing territory.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Lumber Directory.

Renders of the Manufacturers' Record who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record.

Baltimore, Md., December 12.

In the local lumber market nothing of interest has been developed during the past week, and business has shown no expansion in volume, while the demand is light, as usual at this period of the season. There is no movement of importance expected until after the holidays, and the feeling among yardmen and others in the trade is to decrease their stocks until the business of the year is closed up. Receipts of yellow pine during the past week have been light, owing to severe weather in the bay. Stocks on hand are fully ample for the light demand existing. There is some business being done in North Carolina kiln-dried yellow pine, and values are generally firm, with stocks moderate. In white pine there is a fair inquiry, with prices firm. Cypress is dull and steady. The hardwood market is quiet, with a moderate demand from local and out-of-town buyers. The export trade is reported better, and prices show a slightly higher range. There is, however, nothing going forward on consignment, and the principal business is on orders. Planing mills and box and other woodworking factories report business as quiet and orders less numerous.

The following list represents the prices current at this date:

[The quotations for yellow pine are for cargo lots, and for all hardwoods the figures indicate values for choice car lots.]

VIRGINIA AND NORTH CAROLINA PINE	
5-4x10 No. 2, kiln dried.....	\$16 00/0 18 00
5-4x12 No. 2, kiln dried.....	17 50/0 18 50
4-4x10 No. 1, kiln dried.....	16 50/0 17 50
4-4x12 No. 1, kiln dried.....	17 00/0 17 50
4-4 nar. edge, No. 1, kiln dried.....	13 00/0 14 00
4-4 wide edge, No. 1, kiln dr'd.....	18 00/0 19 00
6-4x10 & 12, No. 1, kiln dried.....	23 00/0 24 00
4-4 No. 1 edge floor, air dried.....	13 50/0 14 50
4-4 No. 2 edge floor, air dried.....	10 00/0 11 00
4-4 No. 1 12-in. stock, air dried.....	14 00/0 15 00
4-4 No. 2 12-in. stock.....	12 00/0 13 00
4-4 edge box or rough wide.....	7 50/0 8 50
4-4 edge box do. (ord. widths).....	7 50/0 8 00
4-4 edge box do. (narrow).....	6 50/0 7 50
4-4 12-inch or rough wide.....	9 50/0 10 00
5/4 narrow edge.....	6 00/0 7 00
5/4 wide.....	7 00/0 8 00
8x10-inch.....	8 00/0 9 00
Small joists, 2 1/2-12, 14 and 16 long.....	8 50/0 9 50
Large joists, 3-16 long & up.....	9 50/0 10 50
Scaffolding, 2x3-16 and up.....	8 50/0 9 50

WHITE PINE.	
1st and 2d clear, 4-4, 5-4, 6-4 & 8-4.....	48 00/0 50 00
3d clear, 4-4, 5-4, 6-4 and 8-4.....	43 00/0 44 00
Good edge culls.....	14 50/0 15 50
Good stock.....	16 50/0 17 50

CYPRESS.	
4-4x6, No. 1.....	20 50/0 21 50
4-4x6, No. 2.....	14 50/0 15 50
4-4x6, 16 feet, fencing.....	12 50/0 13 50
4-4x6, rough.....	9 00/0 9 50
4-4 rough edge.....	9 00/0 9 50
4-4 edge, No. 1.....	18 50/0 19 50
4-4 edge, No. 2.....	12 00/0 13 00
Gulf, 4-4, Nos. 1 and 2.....	28 50/0 30 50
Gulf, 6-4, Nos. 1 and 2.....	31 50/0 32 50

HARDWOODS—WALNUT.	
5-8, Nos. 1 and 2.....	65 00/0 75 00
4-4, Nos. 1 and 2.....	80 00/0 90 00
5-4, 6-4 and 8-4.....	85 00/0 95 00
Newell stuff, clear of heart.....	85 00/0 100 00
Culls.....	20 00/0 30 00

OAK.	
Cabinet, white and red, Southern, plain-sawed and good, 1 and 2, 8 inches and up, 12 to 16 feet long, 4-4.....	29 00/0 33 00
Quartered white, Western, 1 and 2 quality, all figured, 6 inches and up wide, 4-4.....	53 00/0 55 00
Culls.....	10 00/0 15 00

POPLAR.	
Nos. 1 and 2, 5-8.....	24 50/0 25 50
Nos. 1 and 2, 4-4.....	28 00/0 30 00
Nos. 1 and 2, 6 and 8-4.....	32 50/0 33 50
Culls.....	13 00/0 16 00

SHINGLES.	
Cypr., No. 1 h'rts, sawed, 6x20.....	7 25/0 7 75
No. 1 saps, sawed, 6x20.....	5 50/0 6 50
No. 1 hearts, shaved, 6x20.....	6 50/0 7 50
No. 1 saps, shaved, 6x20.....	5 25/0 5 50

LATHS.	
White pine.....	2 70/0 2 75
Spruce.....	2 15/0 2 25
Cypress	2 15/0 2 25

Norfolk.

[From our own Correspondent.]

Norfolk, Va., December 9.

Manufacturers here are generally disposed to take a more rosy view of the lumber situation, and the tone of trade so far this month indicates an expansion in the volume of business early in the new year. The demand, while not urgent, is very steady, and for all desirable grades of manufactured lumber prices are firm. No immediate advance in values is proposed, but as the demand becomes more pronounced and stocks grow light values will appreciate. Kiln-dried North Carolina pine shows a great decrease in the amount of stock on hand, and in a few instances the present supply at the various mills would hardly be equal to an extraordinary demand. Air-dried lumber is selling fairly well, and the greatest demand is for flooring boards and box lumber. There is a rumor here of a combination of interests, but as some large millmen oppose the scheme the prospect of an organization to give more strength to the general market is at present doubtful.

It is stated, however, that early in the coming year an effort will be made to form an association, which will have for its object the maintenance of prices for lumber and regulate the output of mills, besides preserving the interests of the general lumber trade. There is considerable activity among box factories and planing mills, while orders are plenty and prices not materially changed. In fact, all woodworking factories are doing a good business this season. The local demand for lumber is increasing with the general activity in building, and important improvements continue to be made throughout the city and suburban points. A knitting mill at Lambert's Point, two large breweries and a plant for the manufacture of barrels, baskets, etc., are soon to be added to the industries of this city. The general freight market for lumber is quiet, but steady, with a moderate offering of vessels. Charters reported last week in New York are as follows: A schooner, 254 tons, from Norfolk to Hackensack at \$2.30, and a schooner, 258 tons, from Norfolk to Boston at \$3.25.

Charleston.

[From our own Correspondent.]

Charleston, S. C., December 9.

The lumber market has been rather quiet during the past week, the volume of business showing no expansion as compared with the previous one. There is, however, a good demand for all desirable grades of manufactured lumber. A number of good orders are being received from the New England and Middle States, and prices, as a rule, hold very firm. The local building demand is fair, and, with the present improvements in progress and buildings in course of erection, a large quantity of material is now being consumed. The croatian industry is growing here, and a good inquiry and demand exists from Northern and Eastern points. The general market closes steady, with quotations as follows: Merchantable lumber, \$14 to \$16 for city-sawed, \$12 to \$14 for railroad; square and sound, \$9 to \$13 for railroad, \$8 to \$11 for raft; dock timber, \$4.50 to \$6.50; shipping, \$8.50 to \$10.50. There is a good demand for shingles, and prices are firm at \$5 to \$7 per thousand. Among the shipments of lumber during the past week the following vessels are reported: Schooner Maggie Keogh with 540,000 feet of lumber; barkentine E. S. Powell with 483,916 feet; steamer Iroquois with 42,204 feet of lumber and 4,200 staves, and steamer Algonquin with 100,000 feet of lumber, all for New York. The schooner Charles D. Hall cleared for New York with 294,614 feet of yellow-pine lumber.

The shipments of lumber through this port since September 1 amount to 19,400,160 feet to coastwise ports and 668,000 to the West Indies, making a total of 20,068,160 feet, against 16,735,407 feet for the corresponding period in 1894-95. Yellow-pine lumber freights remain unchanged, and rates to New York and sound ports are quoted \$4.62 1/2 to \$5: cross-ties, 14 to 14 1/2 cents each.

Savannah.

[From our own Correspondent.]

Savannah, Ga., December 9.

Business in nearly all avenues of the lumber industry of this port has been fairly active during the week under review. There is a good steady demand, and prices are firm at quotations. In all milling sections of Southern Georgia the lumber trade is improving, and mills are generally supplied with orders to keep them busy for the next sixty days. The foreign demand for lumber is better, and numerous inquiries have been received during the past week which will no doubt result in actual business shortly. The market closes firm, as follows: Ordinary sizes, \$11 to \$12; difficult sizes, \$13 to \$18; flooring boards, \$15 to \$22; ship-stuffs, \$16.50 to \$20, and sawn ties, \$10. The following vessels were among the clearances for the week: Schooner Ida Lawrence with 367,231 feet of lumber and Douglas Gregory with 475,692 feet, both for Baltimore; the schooner Thomas W. Hyde cleared for Portland, Me., with 347,992 feet of pitch-pine lumber, and the schooner D. V. Bowers for Boston with 373,910 feet; New York steamers cleared with 87,500 feet of pitch-pine lumber and 210,000 shingles; Boston steamers 12,230 staves, and Baltimore steamer 64,906 feet of pitch pine. Lumber freights hold steady, with a moderate offering of handy-sized tonnage. Foreign business is more or less nominal. The rates from this and nearby Georgia ports are quoted at \$4.25 to \$5.50 for a range including Baltimore and Portland, Me. Railroad ties, basis forty-four feet, 16 cents. Timber rates 50 cents to \$1 higher than lumber rates. To the West Indies and Windward rates are nominal: to Rosario, \$12 to \$13; Buenos Ayres and Montevideo, \$10 to \$11; to Rio Janeiro, \$14; to Spanish and Mediterranean ports, \$11 to \$11.50, and to United Kingdom for orders nominal for lumber at £4 5s. per standard. The charters reported during the week in New York are as follows: A schooner, 179 tons, Savannah to New York, \$4.50; a schooner, 376 tons, from Brunswick to New York, \$4.62 1/2; coal out from Norfolk 80 cents, and a schooner, \$22 tons, from St. Simons to Santos at \$14.

Mobile.

[From our own Correspondent.]

Mobile, Ala., December 9.

The lumber industry in this section of the gulf coast is at the moment quite active, with a steady demand and a corresponding improvement in prices. The vessels now in port loading with lumber and timber will reduce stocks materially. Stocks of timber are generally light, and there is a better outlook for export than for some time past. Hewn timber is still quoted at 10 to 11 cents on a basis of 100 cubic feet, average B1 good. Contracts are made at 11 to 11 1/2 cents basis. The ship Parthenia cleared last week for Cardiff, Wales, with 8296 cubic feet of hewn and 72,084 cubic feet of sawn timber, and 22,644 feet of lumber. The bark J. E. Graham cleared with 66,390 cubic feet of sawn and 14,451 cubic feet of hewn timber for London. The demand for lumber is constant, while mills in the interior are all busy, and report orders several weeks in advance of the output, and with prices satisfactory. The manufac-

turer is in much better spirits. Some of the mills have business in sight beyond the holidays, and the general opinion is that the yellow-pine industry is in a much better condition than at the corresponding date last year. The shingle business is fairly active this season, and the demand from the North is improving. Stocks at present in this market amount to 20,000,000 to 25,000,000, and prices hold very steady. Among the shipments of lumber during the past week the following vessels are reported: Schooner Fred A. Small for Philadelphia with 383,000 feet of lumber; steamer Colombia for Boca del Toro with 40,000 feet of lumber, and steamer Iberia for Belize with 49,970 feet. The topic of discussion here this week was the reported embarrassment of the Seaboard Lumber Co. The Seaboard Company operates large lumber mills at Fairford, sixty miles from this port, and is the largest exporter of lumber to South America, running a line of steamers to ports in Southern Mexico and Yucatan. It is hoped by the friends of the company that matters will be so arranged that the company will still conduct its extensive business in the regular way.

St. Louis.

[From our own Correspondent.]

St. Louis, Mo., December 9.

The general conditions of the lumber market have undergone very little change during the past week, and the inclemency of the weather has retarded operations materially. In yellow pine there is very little demand, and orders are less numerous than they were at the corresponding period last year. Out-of-town dealers are not purchasing freely, although their stocks are light, but are waiting for lower prices, which they expect in the near future. Local retailers are doing a moderate business, and only buying to supply immediate necessities. The planing mills are making regular purchases, and general interior finishing stock is selling, but there is very little demand for rough lumber for outside work. The white-pine trade is fairly active, but a large volume of business in this line is not expected, owing to the unfavorable weather, which interferes with outside work. The local building operations are in a good condition, the report of the city building commissioner showing the value of permits issued last month to be more than \$2,000,000, as compared with \$1,200,000 for the corresponding month last year. There is very little doing in hardwoods, and very little business is expected until after January. Local furniture factories are buying in small lots, and a few orders are coming from implement manufacturers. The statistics of the Lumbermen's Exchange for the month of November show the receipts by rail to have been 4687 cars, compared with 3651 cars for the corresponding month last year. From the lower rivers the receipts were 2,912,000 feet, against 2,213,000 feet last year. The shipments were 1339 cars, against 1174 cars a year ago. For the past week the receipts aggregated 1150 cars by rail and 5000 feet from the lower rivers, compared with 862 cars and 358,000 feet last year. Shipments were 589 cars, against 431 cars a year ago. The demand for sash, doors and blinds amounts to very little, and business may be written dull, with orders for stock goods few in number. Local mills will soon close down for repairs, and will probably remain closed till after the opening of the new year.

Beaumont.

[From our own Correspondent.]

Beaumont, Texas, December 7.

The lumber industry in this section of Southeastern Texas has undergone no perceptible change during the past week.

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and, as usual on the approach of the holidays, very little business is expected. The demand for yard stock continues uninterrupted, and shipments have been considerable so far during the month. There is considerable demand from dealers, but their orders are generally for small lots to meet the demands of their trade. Planing mills are very busy at the moment, as the demand for dressed stock is quite brisk. The Journal in its review of the market says: "There has been no perceptible change in the condition of the market, and no departure from a quiet routine is anticipated until after the holidays. Dealers appear to be doing a fair business, but their orders are for small quantities, and evidently to meet the demands of their trade. The aggregate of yard stock that is going forward, however, is considerable, and none of the mills are accumulating any stock." The shingle movement is active, and stocks are generally light, with a good demand at firm figures. The new band mill of the Long Manufacturing Co. is now running regularly, and the shingle product being shipped direct from the machines, which indicates a good demand. With reference to the reduction in stocks, it is stated that there is scarcely a mill in Texas which has on its yard today as much lumber as it had this time last year. The reduction on the Trinity & Sabine road within the past year will probably amount to 20,000,000 feet. At Orange there is less by 9,000,000 feet than was on the yards a year ago; at Beaumont the stock is about 1,000,000 feet less than at this time in 1894; on the Sabine & East Texas the reduction is between 5,000,000 and 8,000,000; in the Lake Charles district stocks have been reduced about 4,000,000; on the Houston, East & West Texas there is a reduction of about 2,000,000 feet, but the mills on that line as a rule do not carry large stocks. It is stated, also, that there will be no extra sawing at any point in the manufacturing section throughout the winter, and in the absence of any urgent demand there will be at least no decline in prices.

Wants Hardwood Land.

The Manufacturers' Record is in receipt of an inquiry from responsible parties for 75,000 to 100,000 acres of hardwood timber land in a single body, to be not over ten miles from railroad. For further information letters may be addressed to "Hardwood," care of Manufacturers' Record.

Lumber Notes.

The Wrightsville Hardware Co., Wrightsville, Ga., wants to buy chimed staves and hoops for barrels.

The walnut-log men were loading eleven cars of walnut logs at Johnson, Ky., for shipment to Pensacola, Fla., for reshipment to Hamburg, Germany.

The lumber-yard and buildings of the S. A. Conn Lumber Co. at Louisville, Ky., were totally destroyed by fire on the 6th inst. The loss is estimated at \$7000.

Mr. Henry Hankins, of Newmarket, Texas, is now purchasing and yarding walnut timber preparatory to exporting it to England to be converted into material for veneering.

One of the largest of the Southern States Land & Lumber Co.'s saw mills, at Muscogee, in Escambia county, Fla., started up last week. They have been idle several months.

The largest cargo of lumber ever shipped on one vessel was carried from Pensacola, Fla., last week by the British steamship *Magdala*. Her cargo consisted of nearly 2,500,000 feet.

The schooner Henry G. Milliken cleared last week from Wilmington, N. C., for Port au Prince, Hayti, with 127,393 feet of lumber and 5000 shingles, shipped by S. & W. H. Northrop.

The Wilson Cypress Co., of Palatka, Fla., has had a number of electric lights placed in its mill buildings and through the lumber-yards, and commenced last week to operate night and day. This is done to keep up with the steadily-increasing demand for the product.

The Perkins Manufacturing Co., of Augusta, Ga., has an exhibit at the Atlanta Exposition representing a complete bottom story of a dwelling, the most prominent material in the construction being Georgia pine.

Among the clearances from Jacksonville, Fla., last week the following lumber cargoes are reported: British schooner *Ellie* for Hope Town, Abaco, with 28,000 feet of yellow-pine lumber, 7,500 shingles and 2,000 orange-box shooks, and schooner *Hattie C. Luce* for New York with 290,000 feet of lumber.

C. W. Fraser and other owners of land in Arkansas, opposite Memphis, Tenn., have just leased eight acres of land to George Hassonzahl and associates, of Indiana, who will at once erect a saw mill. They will also erect a number of houses, and the plant is expected to be one of the largest in the Memphis lumbering district.

A Norwegian bark has arrived at Sabine Pass and is under charter with the Consolidated Export Lumber Co., of Beaumont, Texas. She will load 500,000 feet of miscellaneous lumber for the River Platte. The schooner *Julia A. Ward* has been chartered by the Reliance Lumber Co. and will take a cargo of lumber to Mexico.

From the reports of thirty-one mills in Texas and Louisiana it is learned that the lumber sawed in October of this year exceeded the amount sawed the same month last year by over 10,000,000 feet. The amount of lumber on hand at the points above mentioned on the 1st of November was 18,000,000 feet less than on the 1st of November, 1894.

It is stated that D. W. Camp, of Lincoln, Neb., has definitely settled upon Jackson, Miss., as a location for a wagon factory. The company has been organized and several sites in that city are being examined. One will soon be purchased and all the necessary buildings erected thereon. The following board of directors was elected at a meeting last week: D. W. Camp, John Boyd, Wirt Adams, F. B. Neal and A. J. Harris.

The Gordon Cooperage Co., Limited, was chartered in New Orleans last week. The purposes of this company are to buy, manufacture and sell hogsheads, barrels and barrel material. The capital stock of this company is fixed at the sum of \$100,000, divided into shares of \$100 each. The officers of the company are Frank L. Gordon, president; Edward L. Simonds, vice-president, and J. J. M. Rivet, secretary.

The Thompson Lumber Co. was incorporated last week, with the principal office of the company at Augusta, Ga. The capital stock is placed at \$30,000, divided into shares of \$100 each. The business of this corporation will be the manufacture of doors, sash, blinds, lumber, furniture and other articles of wood. The incorporators of the company are Jesse Thompson, Jr., J. H. Willington, L. W. Woodward and B. M. Youngblood.

It is stated that the building of a new tramroad is under consideration by a company at Newton, Texas, fifty miles east of Colmesneil. The projectors are E. Downs, Robert Campbell, Charles

Cade and others. The line will run from Stark's Landing, on the Sabine river, through a rich section of long-leaf pine. The new company is in the market for two narrow-gage locomotives, track iron, logging cars, etc. The timber to be run over this road will be dumped into the Sabine river at Stark's Landing and floated to Orange, to be sold to the mills at that point.

The John Paul Lumber Co., of Minnesota, purchased last week 91,000 acres of land in Baker and Columbia counties, Florida, from the Georgia & Florida Round Timber Co. for about \$140,000. It is stated that the John Paul Lumber Co. will erect large lumber mills and turpentine distilleries on the lands, which will materially develop that section of the State. The Georgia & Florida Round Timber Co. is composed of T. M. McConnell, Manor, Ga.; John A. Ewing, of Ewing, Ga.; John R. Young, Savannah; D. T. Daughtry, Cordele; T. G. Crawford, A. C. McLeod, John T. Roberts, A. P. Rose and D. T. Cliatt, of Valdosta, Ga.

A number of millmen from Alabama, Mississippi, Missouri and Arkansas met last Saturday in Montgomery, Ala., and perfected a permanent organization to be known as the Alabama Lumber Association. A board of officers and nine directors were elected. Mr. Millner, of the Millner, Caldwell & Flowers Lumber Co. at Bolling, was elected president of the new association. The other officers and board of directors were not given to the press. The directors will fix a scale of prices to report to the association at the next meeting. It is understood that the prices of dressed lumber have been advanced \$2.50 a thousand feet during the past year, and under the new organization they will go still higher. The meeting adjourned to meet on the 13th inst.

The committee on organization appointed by the gulf coast millmen met in Pensacola, Fla., on the 3d inst. Those present were George W. Robinson, of Pascagoula, chairman; J. W. Black and William March, of Mobile; W. L. Dantler and A. P. Denny, of Moss Point; F. C. Chaffin of Milton; F. M. McMillan, of Pine Barren; E. F. Skinner, of Escambia, and P. K. Yonge, of Pensacola. The meeting was harmonious, and those present were unanimous for an organization. A plan was adopted for the formation of the Gulf Coast Lumber Co., to be composed of all millmen manufacturing lumber for export. It was voted to call a meeting of the millmen, to be held in Mobile on the 10th inst. The basis of the plan is to control the output of the mills, and thus increase the price of lumber on the gulf coast.

Among the recent works descriptive of the South, the handbook of South Carolina, describing its resources and manufacturing industries, is one of the most elaborate which we have received. It is published by the Lucas & Richardson Co., of Charleston, with Mr. Hartwell M. Ayer as the editor. Printed on heavy book paper, with a brilliantly illustrated cover, and containing views of the principal cities and industries of the State, it is more than ordinarily interesting. In glancing over its pages the reader cannot help but note the large amount of information which has been compiled. The information embraces the different business enterprises in its principal towns, classifying such enterprises. The principal manufacturing industries are described and their capital stock and extent of operations given. Values of taxation, also population, are among the other statistics. The towns are described in detail in the work, and anyone who desires accurate information will do well to carefully examine this handbook.

"Come and See."

The number of writers on the development of the South within the last few years might be termed legion, likewise the number of books and pamphlets. The latter can be classed as good, bad and indifferent. Such has been the variety of publications that a description of any section of the South prepared in book form must have considerable originality and be very attractive to arouse special interest. A little work issued with the compliments of Messrs. W. W. Duson & Bro., Crowley, La., will come under this latter head. It is seldom one sees a description more attractively written, printed and illustrated than the one we speak of. A text from the New Testament furnishes the title, and the expression, "Come and See," with which it concludes, is very appropriate in this connection. Anyone who will come to the vicinity of Crowley, La., and see what Messrs. Duson and others have accomplished in Acadia parish will be well rewarded. Readers of the Manufacturers' Record are quite familiar with the really wonderful development of this section of the South. What was prairie land a few years ago has been turned into ricefields, orchards, vegetable gardens and tracts devoted to general farming. It has been, as the work says, endowed by nature with an excellent climate, fertile soil and most, if not all, the advantages which tend to make life well worth living and an occupation profitable.

While the little book fully describes the advantages and gives figures showing the results, the photographs which it contains will prove to be the strongest magnets in attracting the attention of its readers to this section of the country. The photographs include a basket of apples arranged so as to show the really enormous size of the fruit grown but a few miles from Crowley. A very fine illustration of a cotton-field, showing the unusually large bolls, is also presented, while a rice-cutting scene on one of the plantations is displayed true to life. Other illustrations are a field of sugar-cane, the irrigation plant of Messrs. Duson & Bro., by which their rice plantations are receiving a water supply; a peach tree but two years old, well laden with fruit; pear trees showing the abundant harvest, and a single branch of a three-year-old peach tree which has borne so abundantly that it is almost impossible to see the stem by reason of the fruit clusters. Scenes at Crowley, which is one of the most thriving towns in the South, and has a population of 2500 people, although less than ten years old, are also included in the work. The Southern States magazine and other authorities are liberally quoted in the preparation of the book, and some of its special features are letters from Northern people who have settled in the South, which originally appeared in the "Southern States." We would advise anyone who desires to obtain accurate information about this section of the South to write Messrs. Duson & Bro. for a copy of this book. They will not only read it, but keep it.

Wise Men

read the advertising pages of the Manufacturers' Record carefully because they are always sure to find something of value; it may be a special sale, or an opportunity for investment, or some new machinery, or some one looking for a location for a factory, or a thousand and one things advertised that may concern you. Every man ought to *study* newspapers, not simply glance over them, but examine in detail the Manufacturers' Record, for instance, and he will be sure to find something that can be made profitable in his business. In its news columns and in its advertising pages he will find matter that may prove invaluable in his business operations.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD
seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

ALABAMA.

Birmingham—Coal and Iron Mines.—The Tennessee Coal, Iron & Railroad Co. will put its mines in operation again after an idleness lasting since 1894.

Birmingham—Grist Mill.—Bruce & Miers will erect a grist mill.

Birmingham—Pipe Works.—The Birmingham Soil Pipe Co., noted last week, is now equipping its plant; daily capacity to be ten tons.*

Gurley—Spoke Mill.—The Enterprise Spoke Co. is enlarging its mill, and will put in additional machinery.*

Jasper—Coal Mines.—The Jasper Coal Co. has been incorporated by J. H. Hayes, Howard Lamar and Peyton Norvell.

ARKANSAS.

Little Rock—Box Factory.—Oliver Clark and Caris, Ledwidge have purchased the Little Rock Paper Box Factory.

Warren—Lumber Mill.—Shirey & Butler are enlarging their mill to put in more machinery.

Warren—Lumber Mill.—The Merchant Lumber Co. has recently put in new machinery.

FLORIDA.

Baker County—Saw Mills, etc.—La Crosse (Wis.) parties have bought 91,000 acres of pine lands and will erect mill for cutting timber.

Baker County—Lumber Mills, Turpentine Plants, etc.—The Jno. Paul Lumber Co., of Minneapolis, Minn., has purchased 91,000 acres of land in Baker and Columbus counties for \$140,000. The company will erect large lumber mills, turpentine stills, etc., to develop the land.

Pensacola—Cycle Works.—John Sherry is manufacturing bicycles.

Pensacola—Navigation Canal.—The Pensacola Inland Navigation Co., composed of H. Baars, F. C. Brent, D. G. Brent, R. J. Brent and E. O. Saltmarsh, with a capital of \$50,000, has been organized for the purpose of constructing and operating a canal about one mile in length to connect the waters of Pensacola and Perdido bays.

GEORGIA.

Atlanta—Hosiery Mill.—The erection of a hosiery mill is contemplated. Jas. L. Logan, 412 Temple Court, can give information.

Atlanta—Hosiery Mill.—The Atlanta Hosiery Mills has applied for charter, the incorporators being James L. Logan, Chas. S. Kingsbury, Jacob Haas and others; will start business with twenty-five machines; office, 412 Temple Court.*

Augusta—Lumber Mills.—Jesse Thompson,

Jr., J. H. Wellington and others have incorporated the Thompson Lumber Co., with a capital stock of \$30,000, to manufacture lumber, etc.

Brunswick—Shoe Factory.—The Wilson Shoe Co. will soon increase the capacity of its factory.

Rome—Cotton Mill.—It is announced in Rome, Ga., that David Trainer, of Fort Mill, S. C., and J. N. Trainer, of Chester, Pa., who were recently reported in the Manufacturers' Record as looking for a site for a 30,000-spindle and 1000-loom mill, have selected Rome.

Rome—Electric-light Plant.—N. H. Bass has bought the Rome electric-light plant; will probably operate it.

KENTUCKY.

Paintsville—Coal Mines.—F. A. Stacey, of Chillicothe, Ohio, and J. P. Deiter, of Chicago, have purchased 10,000 acres of coal lands for \$25,000, and will develop same.

Warfield—Gas Wells.—W. F. Jordan, of Bradford, Pa., and E. E. Allen, of Huntington, W. Va., will probably develop gas wells and construct pipe lines.

LOUISIANA.

Iberville—Woodworking.—Dupont & Mix have equipped a wheelwright shop.

New Orleans—Cooperative Plant.—The Gordon Cooperage Co., Limited, has been incorporated with a capital stock of \$100,000 to manufacture cooperage, etc. Frank L. Gordon is president; Edward L. Simonds, vice-president, and J. J. M. Rivet, secretary.

New Orleans—Manufacturing.—The Southern Stationery Co., Limited, has been incorporated for manufacturing, etc., with a capital stock of \$25,000; L. B. Robinson, president, and E. S. Atkinson, secretary-treasurer.

MARYLAND.

Baltimore—Electric Plant.—The City & Suburban Railway Co. will put in two new engines of 2400 horse-power.

Baltimore—Machinery Works.—The Maryland Manufacturing & Construction Co. has been incorporated by S. Davies Warfield, Henry B. Keyser, Jacob Epstein, Calvin S. Shriner, John K. Cowen, Edward W. Phillips, Richard Emory Warfield, Abraham I. Weinberg and Charles Taylor Jenkins. The capital stock is \$100,000. The company will manufacture machinery for commercial and other uses and acquire and develop patented inventions.

Baltimore—Manufacturing.—The W. E. Beveridge Manufacturing Co., for making steam cookers and household specialties, has been incorporated by Winfield E. Beveridge, John R. Gould, Jr., Joseph W. Whiteford, Howard Bryant and John S. Fardy. The capital stock is \$20,000.

Baltimore—Mercantile.—The Britton-Varden-Moss Co. has been incorporated by Joseph E. Britton, of Norfolk, Va.; Benjamin C. Varden, Edwin P. Moss, James S. Watkins and William L. Hardesty, of Baltimore, with a capital stock of \$10,000, to do a general merchandise and produce commission business.

Baltimore—Manufacturing Toys, etc.—The William Koch Importing Co. has been incorporated by William Koch, Oliver P. Merriman, Herman Kochert, Emil H. Zeller and Charles A. Brink, for the purpose of importing and manufacturing toys and fancy articles. The capital stock is placed at \$100,000.

Baltimore—Packing-house.—The H. B. Pearson Co. has been incorporated with a capital stock of \$1000, by Harry B. Pearson, W. H. Hudson, Elmer J. Jones, James H. Foy and H. B. Springer, to do a general packing business.

Baltimore—Electric Plant.—The City & Suburban Railway Co. has contracted for an increase by one-third of its motive power at the Pratt-street power-house. The plant to produce this increase includes two direct-coupled Mackintosh & Seymour engines of an aggregate of 2400 horse-power, with corresponding electrical generators and complete equipment. The contract has been awarded, and the work of putting in the additional plant will be pushed as rapidly as possible.

Baltimore—Glass Works.—The South Baltimore Co., William H. Whitridge, president (office, Equitable Building), has purchased a large tract of land at Westport, near Baltimore, and will erect a glass plant

of large capacity. The concern will be known as the Baltimore Glass Works, and the capital will be furnished by residents of Buffalo, N. Y. The company owns certain patents for manufacturing improved airtight glass preserving jars, and will manufacture these and special glass articles used in electrical work and other specialties. Work in the new factory will be commenced early in the coming year.

Cliffords (Postoffice, Brooklyn)—Chemical Works.—Jos. Vanruymbeke and Frederick Vermeren, of Aurora, Ill., have erected buildings at Cliffords, near Brooklyn, and will equip same for manufacturing lead compounds for paint manufacturing.

Hagerstown—Butter-dish Factory.—Geo. B. Cearfoss has started his butter-dish factory with daily capacity of 150,000.

Hebron—Shirt Factory.—M. N. Nelson & Co. have established a shirt factory.

MISSISSIPPI.

Bay St. Louis—Water Works.—The construction of water works is talked of. Address the mayor.

Greenwood—Water Works.—The city will construct the water works already noted, and is asking for bids.*

Heidelberg—Oil Mill.—A \$10,000 stock company is being organized to erect a cotton-seed-oil mill.

Jessamine—Cannery, etc.—Newholes & Treakle, of Chicago, have purchased 8000 acres of land, which they will improve, cultivate, erect cannery, etc.

Meridian—Foundry.—The Progress Manufacturing Co. will put in two cupolas.*

MISSOURI.

Kansas City—Mercantile.—The Posey-Brobeck Mercantile Co., capital stock \$15,000, has been incorporated by William T. Posey, William P. Brobeck, George S. Gill and others.

Kansas City—Storage, etc.—The Rhodes-Barkley Storage & Transfer Co., capital stock \$5000, has been incorporated by Hiram Barkley, H. S. Rhodes and J. D. Estes.

Kansas City—Telephone Factory.—A. M. Temple (office, Temple Block), R. J. Pratt, David Caulkins, J. N. Davis and others have incorporated the Kansas City Telephone Exchange, with a capital stock of \$200,000, to manufacture telephone instruments, etc.

Louisiana—Yeast.—The Hall Yeast Co., of Louisiana, capital stock \$2000, has been incorporated by Mrs. Elizabeth Hall, Wm. K. Hall, Frank D. Lair and A. C. Lewis.

Lowell—Electric-light Plant.—Construction of electric-light plant is talked of. Address the mayor.

Pink Hill—Coal Mine.—It is reported that S. Parsons will open a coal mine.

Springfield—Stove Works.—The Springfield Stove Works Co., capital stock \$100,000, has been incorporated by F. W. Baldwin, M. B. Clark, W. D. Sheppard, Benjamin U. Massey and others.

St. Louis—Mercantile.—Ferd. Diekman and associates have incorporated the Diekman Feed Co. with a capital stock of \$10,000.

St. Louis—Realty.—The Oehler Realty Co., capital stock \$9000, has been incorporated by O. C. Oehler, Emil E. Oehler and L. S. Kohlby.

St. Louis—Stove Works.—The Alles Stone Works Construction Co., capital stock \$2000, has been incorporated by Anna Alles, Louis Teugel and Hermann Alles.

NORTH CAROLINA.

Charlotte—Water Works.—J. L. Ludlow, hydraulic and sanitary engineer, of Winston, N. C., has submitted a report upon the improved water supply for the city, noted last week, and the sources from which a supply may be obtained sufficient to meet the present and prospective needs of the city, recommending a new supply, to be owned and operated by the city.

Fayetteville—Bleachery.—A report says that a movement is afoot to erect a \$100,000 bleachery.

Fayetteville—Cotton Mill.—About \$50,000 has been subscribed to the stock of the proposed cotton mill; C. W. Bidgood, secretary.

Greenville—Electric-light Plant.—The Greenville Lumber Co. will put in an electric-light plant to light its plant and the city. Mountain Island—Cotton Mill.—The W. J. Fletcher and Jules Perthius.

Hooper Manufacturing Co. will erect a new mill in 1896.

Wilkesboro—Tannery.—C. C. Smoot & Sons, of Alexandria, Va., will not commence the erection of their \$100,000 tannery until next fall.

SOUTH CAROLINA.

Charleston—Phosphate Works.—The Globe Phosphate Co., W. T. C. Bates, president, has leased its plant to Richmond (Va.) parties.

Chesterfield—Knitting Mill.—W. D. Craig will establish a knitting mill; machinery bought.

Columbia—Ice Plant.—The Palmetto Ice Co. has let contract for an additional 45-ton ice plant.

Columbia—Power-house.—It is understood that the Columbia Water Power Co. has had plans prepared for the big electrical power-house previously reported as to be built. Work is to commence soon, and when completed the plant will generate 6000 to 8000 horse-power.

Easley—Rock Quarry.—A new granite quarry is being opened near Easley by a new company; J. B. Beverly, of Winchester, Va., agent.

Lancaster—Sash and Blind Factory.—J. J. Whisonant, of Blacksburg, S. C., has organized a company to erect a sash, door and blind factory.

Spartanburg—Mercantile.—Chartered, by M. G. Galbraith, R. D. Galbraith and W. L. Allen, the Spartanburg Grocery Co., to do a general mercantile business and buy and sell real estate. The capital stock is \$3000.

TENNESSEE.

Chattanooga—Knitting Mill.—The Chattanooga Knitting Mills will be equipped; office, 63 Times Building; no machinery purchased yet.

Clarksville—Furnace.—The Gracey-Woodward Iron Co. has blown in its furnace.

Dayton—Pipe Manufacturing.—Report says that G. Jamme will start a pipe factory.

Harriman—Lumber Mill.—Arrangements are under way for putting the S. K. Page Manufacturing Co.'s plant in operation.

Jackson—Electric-light Plant.—Mr. Henderson, of Murfreesboro, will apply for electric-light franchise.

Jackson—Fire-alarm System.—The city has closed a contract for the Gamewell fire-alarm telegraph system.

Knoxville—Iron Works.—The Knoxville Iron Co. is putting in a new heating furnace.

Memphis—Iron and Wire Works.—O. K. Harry, of Dallas, Texas, will locate in Memphis a plant for the manufacture of corrugated iron roofing, siding, iron fencing and wire goods.

Memphis—Barrel Factory.—It is said that Schwarzwald & Son, of Louisville and St. Louis, are negotiating for a site in Memphis on which to erect a \$25,000 barrel and keg plant.

Memphis—Saw Mills, etc.—C. W. Frazer has leased eighty acres of timber land to George Hassonzahl and others, of Indiana, who will erect mills to cut the timber.

Miser—Oil Deposits.—A dispatch from Miser states that rock oil has been discovered near that town, and W. B. Underwood has been experimenting with same.

Morristown—Water Works.—The construction of the city's water works has been begun by J. N. Hazlehurst & Co., contractors, of Atlanta, Ga. J. L. Ludlow, C. E., of Winston, N. C., is the designing and constructing engineer.

Nashville—Publishing.—The Sun Publishing Co. has been organized with B. A. Enloe, president; W. J. Allen, secretary-treasurer, to establish printing plant.

TEXAS.

Abilene—Ochre Mills, etc.—A bed of red ochre covering eighty acres of land has been found near Abilene, and D. B. Gorley is corresponding with Fort Worth parties relative to developing same and erecting mills for crushing, etc.

Alta Loma—Cannery.—The Gulf Coast Canning & Preserving Co., capital stock \$25,000, for canning, evaporating, drying and otherwise preserving and pickling fruits, etc., has been incorporated by R. T. Wheeler, B. F. Johnson, H. J. Runge, Geo. H. Park, Edwin W. McCarthy, S. D. Fletcher and Jules Perthius.

Aransas Pass—Packing-house.—The erection of stock-yards, packing-house, etc., is about decided upon. The Aransas Pass Harbor Co. can give information.

Beaumont—Irrigation System.—The Port Arthur Land Co. intends to construct system for irrigating 15,000 acres of rice lands.

Bonham—Mercantile.—Chartered: The Bonham Wholesale Grocery Co., capital stock \$30,000, by Zac. Smith, S. B. Howard, Jim Booth, Hugh Hadsell and W. C. Duncan.

Corpus Christi—Canal.—Jno. Willacy is heading a project to construct canal and dam for irrigation, etc.

Dallas—Publishing.—The Southern Mercury Publishing Co. filed its charter, with capital stock \$25,000; incorporators, Harry Tracy, Milton Park and E. F. Allen, of Dallas county, and N. H. Tracy, of Milam.

El Paso—Water Works.—A Mr. Smith, of Deming, N. M., talks of constructing water works at El Paso.

Galveston—Canal.—The Texas Coast Canal Co., already organized, proposes to construct a canal 150 feet wide and five feet deep from Galveston to the Rio Grande river, and work will be commenced soon. A. Boschke will have charge of the work.

Karnes City—Brick Works.—Mr. Ballowe will establish a brick-yard.

Mexia—Cotton Gin.—Walter B. Jackson will rebuild his cotton gin.

Temple—Increase Capital.—The Fullview Land Co. amended its charter by increasing its capital stock from \$3000 to \$6000 and increasing its number of directors.

Terrell—Hardware.—The Terrell Hardware Co., capital stock \$5000, for the purchase and sale of hardware, agricultural implements and farm implements, has been incorporated by F. M. Barton, James Wallace and P. R. Scott.

Velasco—Construction.—The Velasco Construction Co. amended its charter by increasing capital stock from \$10,000 to \$15,000 and changing the name of this corporation from the Velasco Construction Co. to the Gulf Towing Co.; incorporators, John Wunches, J. M. Ferguson, J. B. Shea, John A. Wilkins and John Winden.

VIRGINIA.

Buena Vista—Tannery, etc.—George J. Appold & Son have been succeeded by the Howard Oak Leather Co., incorporated with a capital stock of \$1,000,000, and having its main office in Baltimore, Md. Geo. J. Appold is president; Michael Jenkins, vice-president, and C. A. Layfield, secretary. The tannery at Buena Vista will be enlarged to double its present output of 23,000 hides yearly.

Luray—Telephone Lines.—E. J. Foote has leased the Luray & Sperryville Telephone Co.'s lines.

Martinsville—Corn Mill.—T. W. McCabe expects to erect a corn mill for W. D. Spencer & Co.*

Martinsville—Cotton Mill.—C. W. Jones is trying to organize a company to build a cotton mill.

Martinsville—Ice Plant.—T. W. McCabe contemplates building an ice plant.

Richmond—Chemical Works.—The S. G. Webb Chemical Co. has been organized, and will establish works. S. G. Webb is president and general manager; Wm. M. Coulling, vice-president, and J. J. Boswell, secretary-treasurer; capital stock \$20,000, with privilege of increasing to \$50,000.*

Trotmanville—Iron Mines.—J. Shirley Smith is opening iron-ore mines.

WEST VIRGINIA.

Martinsburg—Brass Works.—The Business Men's Association has located the Brooklyn Brass Manufacturing Co.

Waverly—Oil Wells.—The Valley Mills Oil Co. has been organized by Wheeling people, and controls the lease on thirty-five acres of the Sisk farm at Valley Mills, near Waverly, and will at once proceed to develop it.

Wheeling—Gas and Oil Wells.—The Reed Oil & Gas Co. has applied for a charter through S. G. Smith. The capital is \$7000, paid in, and the incorporators are Charles Bachman, Charles Henning, John Walton, D. M. Campbell, H. B. Seybold and M. S. Colvig, of Wheeling, and George S. Reed, of Rochester.

Wheeling—Gas and Oil Wells.—Incorporated: The Reed Oil & Gas Co., with a capital stock of \$25,000. The incorporators are George S. Reed, of Rochester, Pa., and Charles F. Buchmann, Marsden L. Colvig, C. H. Henning, John Walton, Harry B. Seybold and D. M. Campbell, of Wheeling.

BURNED.

Baltimore, Md.—The Baltimore Chrome Works damaged; loss \$10,000.

Columbia, S. C.—The Nelson Hotel; loss \$5000.

Cottonwood, Texas.—E. M. Norton's cotton gin; loss \$3800.

Danville, Va.—The Sutherlin-Mead Co.'s tobacco factory, damaged to extent of \$18,000.

Elm City, N. C.—J. D. Robbins's saw mill. Louisville, Ky.—The Louisville Refining Works damaged.

Natebez, Miss.—Sessions Bros.' cotton gin, in Wilkinson county.

Parkersburg, W. Va.—The Academy of Music; loss \$15,000.

St. Louis, Mo.—The Jas. Hogan Printing Co.'s printery; loss \$50,000.

BUILDING NOTES.

Anite City, La.—School.—F. H. Drake has contract to erect \$4000 school.

Baltimore, Md.—School.—Plans have been completed for No. 9 schoolhouse, to cost \$35,000. Address the Inspector of buildings.

Baltimore, Md.—Dwellings.—Geo. C. Goldman has permit to build nineteen two-story dwellings.

Bastrop, Texas—Church.—Chartered: The Bastrop Christian Church, capital stock \$4000, by A. A. Erhard, A. C. Erhard and T. W. Cain.

Beaumont, Texas—Hotel, etc.—The Port Arthur Land Co. will build a frame hotel to cost \$10,000; plans ready and bids wanted. Address care of C. H. Figley, manager.

Charlotte, N. C.—Warehouse.—Geo. W. Bryan will build a 30x50-foot warehouse.

Chattanooga, Tenn.—Business Houses.—E. G. Hovey has permit to build two \$4000 houses.

Clarksville, Va.—Hotel.—Angene & Veon, of Postoria, Ohio, will erect a hotel, as reported last week.

Jacksonville, Fla.—Grandstand, etc.—The Panama Park Co. will be chartered to build grandstand, etc. Address care of A. W. Cockrell, Jr.

Jacksonville, Fla.—Armory.—W. F. Conchman has charge of the specifications for the plans for the new armory.

Jefferson City, Mo.—Courthouse.—The county has voted \$60,000 of bonds for building a courthouse.

Karnes City, Texas—Store.—John Edgar will build a two-story brick store.

Lawrenceville, Va.—Residence.—Dr. C. N. Lewis will erect a residence to cost \$35,000. W. K. Holt is making plans.

Macon, Ga.—Storehouse.—Mrs. S. T. Coleman has let contract for erection of new storehouse.

Madisonville, Ky.—Water Works.—The city will submit to a vote the proposition for issuing \$21,000 or more in bonds for water works. Address the mayor.

Marlin, Texas—School.—The city has accepted plans by Sam. P. Herbert, of Waco, for the new school building.

Martinsburg, W. Va.—The Improvement, Loan and Building Association will erect buildings to cost about \$14,000.

New Orleans, La.—Clubhouse.—G. M. Ferguson has submitted plans to the Harmony Club for a new building to cost about \$100,000.

Salisbury, N. C.—City Hall.—C. C. Hook, of Charlotte, has prepared plans for a new city hall.

Schulenburg, Texas—Stores.—Mauer & Welding, of La Grange, have contract at \$5000 to build three brick stores for Robert Walters, Sr.

Sistersville, W. Va.—Depot.—The Ohio River Railroad Co. contemplates building a depot.

St. Louis, Mo.—Office Building.—A London syndicate represented by B. F. Small will erect an 18-story modern office building after plans already prepared by L. B. Wheeler and Craig McClure; contract awarded to S. M. Carter & Co.

St. Louis, Mo.—Bank Building.—The Mississippi Valley Trust Co. will build a \$160,000 bank building after plans by Eames & Young.

Valdosta, Ga.—Church.—A \$12,000 church building is proposed. E. P. S. Denmark is interested.

Washington, D. C.—Dwellings, etc.—A Goenner has plans for a four-story apart-

ment-house 67x150 feet, to cost \$38,000. Hunter Jones has prepared plans for 8. C. Sipot for a three-story residence 20x85 feet, to cost \$6500. W. S. Plager has prepared plans for a three-story medical building 30x80 feet, to cost \$5000. Geo. P. Newton has prepared plans for a block of ten buildings, to cost \$25,000—the above to have all the latest improvements, such as elevators, steam heat, electricity, etc.

Washington, D. C.—Synagogue.—Funds are being raised to build a new synagogue; M. Loeb, chairman.

Washington, D. C.—Dwellings.—D. B. Gottwals has permit for three dwellings to cost \$6500.

Washington, D. C.—Dwelling.—Judge Cox, of Criminal Court No. 2, has permit for an \$8000 dwelling.

Washington, D. C.—Hotel.—T. F. Schneider has made preliminary sketches for an 18-story, 250-foot-square hotel, proposed by Boston and Cleveland capitalists.

Weston, W. Va.—Bank Building, etc.—A company is organizing for the purpose of erecting a business block. Address S. D. Camden, 90 National Exchange Bank.

RAILROAD CONSTRUCTION.

Steam Railways.

Alexandria, Va.—The Pennsylvania Company is building a short extension of its Alexandria division from Waterloo to the Potomac aqueduct bridge.

Alexandria, Va.—The contract for the laying of the Washington, Alexandria & Mt. Vernon Railway tracks in Washington has been awarded to Mr. A. Saxton, who has been building the Ninth street line. The work is to be begun at once. The electric railway cars will use the Pennsylvania Railway tracks on the Long bridge over the Potomac into Washington, and the overhead trolley will be used across the bridge. In Washington the underground trolley will be used. From the Long bridge the new line will be laid on 14th street to E, thence down E to E½ street, terminating at the power-house.

Ashland, Ky.—It is reported that a scheme is on foot to make a new system from the Ohio river to the Atlantic seaboard and from Louisville to Pittsburg by extending the Cincinnati, Portsmouth & Virginia to Johnson City, Tenn., connecting it with the Ohio River & Charleston, and extending the latter to its South Carolina section. Ralph Peters, Cincinnati, is president of the Cincinnati, Portsmouth & Virginia.

Ashdown, Ark.—The Arkansas & Choctaw Railway Co. which is building a road from Ashdown into the Indian Territory, has nine miles of road graded and has just purchased an engine and 123 cars. I. R. Keith is president.

Belington, W. Va.—The Roaring Creek & Belington road, a feeder of the Roaring Creek & Charleston, is reported, has been completed. It extends from Belington to Monroe.

Belton, Texas.—The Missouri, Kansas & Texas is surveying a five-mile branch to stone quarries near Belton. J. W. Petheram is chief engineer.

Bessemer, Ala.—The Tennessee Coal, Iron & Railroad Co. is at work with a large force of hands grading and laying about two miles of track from Reeder's Gap station to a new ore mine.

Charleston, W. Va.—W. S. Edwards, Frank A. Smith and others, of Charleston, have incorporated the Kanawha & Paint Creek Company, to build a line from Paint Creek, in Kanawha county, to a point in Mercer county.

Cerro, Texas—An organization to promote a railroad through Cerro to Aransas Pass has been effected, with Otto Bouchel, chairman. Hon. E. B. Wheeler and others are interested.

Denison, Texas—The Texas & Pacific has nearly completed its extension to Denison. It is reported that the company will build into the Indian Territory to reach the coal deposits. B. S. Wathen, at Dallas, is chief engineer.

El Paso, Texas—The El Paso Northern Railway has been reorganized, with W. L. S. Thorne, general manager of the Texas & Pacific, as president; C. R. Morehead, vice-president, and B. F. Darbyshire as treasurer. These officers, with C. E. Satterlee, of New York; W. S. Abrams and E. D. Sargent, of Dallas, comprise the board of directors. All are officials of the Texas & Pacific except C. R. Morehead, who is a banker of this city. It is stated that the company intends completing the unfinished line between El Paso and White Oaks,

which the Eddy Brothers have been promoting.

Franklin, W. Va.—Pendleton county, W. Va., has voted to issue \$50,000 in bonds to secure the construction of the Chesapeake & Western road through its territory. E. C. Machen is promoting the line at Harrisburg, Va.

Hagerstown, Md.—It is reported that the Cumberland Valley Railroad Co. is considering the project of extending the Mont Alto Railroad, a branch, to Fayetteville, Greenwood and other towns near by. The extension would mean the building of perhaps eight or ten miles of track. T. J. Breerton, Chambersburg, Pa., is engineer.

Nashville, Tenn.—Recever C. O. Godfrey, of the Teanessie Central, informs the Manufacturers' Record that he is about to go to New York to secure estimates for rails and other material. His address will be the Fifth Avenue Hotel.

Pensacola, Fla.—S. N. Von Praag, president of the Pensacola & Northwestern Company, again advises the Manufacturers' Record that he is ready to negotiate with contractors for constructing portions of the line which is projected from Pensacola to Memphis, Tenn.

Rockport, Texas—The Rockport & Northern Company has been chartered with \$5,000,000 capital to build a road from Aransas Pass to a connection with the Missouri, Kansas & Texas at Smithville. The distance is 145 miles. Baltimore and New York parties are said to be interested.

Spencer, W. Va.—The Clendenin & Spencer road, now under construction, is to be built from Clendenin, on the Charleston, Clendenin & Sutton, to Spencer, on a branch of the Ohio River road. The distance is thirty miles, and sixteen miles have been completed. W. T. Lewis, of Charleston, is a large stockholder.

Tifton, Ga.—The Tifton & Northeastern road, which is now being extended to Fitzgerald, Ga., is completed for sixteen miles. Rails are being purchased for the extension, which is to be twelve miles long and is to be completed by February 1. H. H. Tift is building the line.

Tilden, Texas—A call for a mass-meeting of the citizens of McMullen county, on January 14, to consider the advisability of urging the construction of a railway from Aransas Pass to Eagle Pass, through the counties of Live Oak, McMullen, La Salle, Dimmitt and Maverick, has been announced.

Upper Marlboro, Md.—The Washington & Chesapeake Beach road (unfinished) has been sold to J. Kennedy Tod & Co., bankers, of New York, representing creditors. It is reported that the purchasers may complete the line, which is to be twenty-seven miles long.

Vernon, Texas—Secretary Lowe, of Oklahoma Territory, has issued a charter to the Santa Fe, Oklahoma & Western Railroad Co., which also includes a land and town-site company; capital stock \$1,500,000. The railroad is to run from Sapulpa, I. T., to Vernon. A. A. Kellogg, of Clinton, Mo.; R. S. Reaves, of Guthrie, Okla., and H. R. Perry, of Rushville, Ind., are directors.

Waco, Texas—R. P. Duncan and others, of Waco, are interested in a proposed line from Thornton, on the Texas Central system, to the Robertson county coalfields.

Walterboro, S. C.—General Manager H. A. Molony, of the Walterboro & Western, states that the road is now being extended to Ehrhardt's station, in Barnwell county.

White Sulphur Springs, W. Va.—Jed Hotchkiss, of Staunton, Va.; John T. McGraw, of Gaithersburg, W. Va., and others are named as incorporators of the West Virginia Southern & Midland Company, which is promoting a line from Rowlesburg, W. Va., on the Baltimore & Ohio, to White Sulphur Springs.

Electric Railways.

Charleston, W. Va.—It is announced that Vandergraff & Jacobs, of Philadelphia, have secured the contract for the Charleston street railway, and that work is to begin at once.

Graham, Va.—It is reported that a company has been organized to build a trolley line to Bluefield, and that work is to begin at once.

Hagerstown, Md.—Work has begun on the Hagerstown & Potomac Company's trolley road. It is to be laid with 50-pound steel rails. S. Ritter Icks is president of the construction company.

Pensacola, Fla.—Sterritt Tate and others are organizing a company to build a trolley line.

Scranton, Miss.—Martin Turnbull and others are endeavoring to secure a franchise to build a line between Scranton and Pasco.

Spartanburg, S. C.—The work of laying rails on the electric line between Spartanburg and the Clifton Manufacturing Co.'s plant has begun.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Belting, Pulleys, etc.—The Birmingham Sill Pipe Co., Birmingham, Ala., is in the market for belting, shafting, pulleys and other machinery.

Boiler.—T. W. McCabe, Martinsville, W. Va., will need a large steam boiler.

Boiler and Engine.—The Appomattox Building, Supply & Loan Co., Petersburg, Va., wants boiler and engine.

Boiler and Engine.—The Atlanta Hosiery Mills, 412 Temple Court, Atlanta, Ga., will want ten horse-power engine and boiler.

Boiler and Engine.—The S. G. Webb Chemical Co., Richmond, Va., wants a forty horse-power engine and fifty to sixty horse-power boiler, new or second-hand, stationary or locomotive type.

Boiler and Engine.—Wanted, a ten horse-power steam engine and fifteen horse-power boiler. Address J. 301, Sun Office, Baltimore, Md.

Brick Machine.—The Appomattox Building, Supply & Loan Co., Petersburg, Va., wants a brick and tile machine.

Building Materials.—K. B. Harvey, Punta Gorda, Fla., wants to buy \$2000 worth of iron nails, cement, roofing, iron ceiling, paint and wall paper.

Cannery.—Jesse E. Burtz, Palatka, Fla., wants full information of cannery, cost of machinery, etc.

Chemical Works.—The S. G. Webb Chemical Co., Richmond, Va., wants outfit for chemical works, such as grinding mills, filter presses, steam jacketed open and vacuum pans.

Coffee Roaster.—W. T. Morris, Lexington, Ky., wants prices on a coffee roaster.

Cupolas.—The Progress Manufacturing Co., Meridian, Miss., wants two cupolas.

Draperies.—S. S. Shaw, Box 207, Williamsport, Pa., wants to buy draperies and trimmings for Knights of Malta lodgerooms.

Electric Machinery.—The S. G. Webb Chemical Co., Richmond, Va., wants electric lighting and motive-power machinery.

Electric-light Plant.—McGhie & Moore, East Liverpool, Ohio, will buy electric-light plant.

Gas Engine.—Wanted, a two horse-power gas engine. Address J. 301, Sun Office, Baltimore, Md.

Gasoline Stoves.—F. J. Johnson, Galveston, Texas, wants to correspond with manufacturers of gasoline stoves.

General Machinery.—The Lasseter & Shaw Co., Florence, Ala., wants to correspond with general manufacturers of machinery.

Iron Planer.—Wanted, a first-class second-hand or new iron planer, one that will work about 48x48-inch by 25 or 30 feet long, with two heads; if second-hand it must be a modern tool with all automatic feeds. Address Lock Box 424, Lowell, Mass.

Knitting Machinery.—The Atlanta Hosiery Mills, Atlanta, Ga., will want twenty-five knitting machines.

Knitting Mill.—Crews & Westbrooks, Danville, Va., want estimates on complete knitting mill.

Lithographic Outfit.—H. F. Miller & Son, Oak and 26th streets, Baltimore, Md., want steam lithographic printing presses and other machines necessary for equipping a first-class lithographic establishment for printing on tin.

Pail and Tub Machinery.—C. B. Smith, Jacksonville, Fla., wants pail and tub machinery.

Paint Mill and Machine.—H. F. Miller & Son, Oak and 26th streets, Baltimore, Md., want a new or good second-hand paint mill;

also want an automatic steam painting machine for painting sheets of tin.

Rails.—The Pomona Terra Cotta Co., Pomona, N. C., wants prices on 2000 feet second-hand 12 to 16-pound iron or steel rails.

Sash and Door Machinery.—S. M. Wilson, Aberdeen, N. C., wants to communicate with manufacturers of hand and foot-power machinery for manufacturing sash and doors.

Saw Mill.—T. W. McCabe, Martinsville, W. Va., will need a saw mill.

Scales.—The Cleaveland Furniture Co., Jacksonville, Fla., wants second-hand wagon scales about 8x6 or 8x10, to weigh up to 3000 pounds.

Scales.—The S. G. Webb Chemical Co., Richmond, Va., wants wagon and platform scales.

Shingle and Lath Machinery.—Philppen & Jones, Box 118, Kershaw, S. C., want to buy a shingle and lath machine.

Spoke Machinery.—The Enterprise Spoke Co., Gurley, Ala., will buy second-hand spoke machinery.

Stone Crusher.—C. N. Stevens, purchasing agent Missouri, Kansas & Texas Railway, St. Louis, Mo., wants information of a portable stone crusher that is used on front of and attached to a locomotive.

Tanks.—Thos. R. Sharp, Sharp, N. C., wants to correspond with manufacturers of wooden tanks.

Telephone Equipment.—McGhie & Moore, East Liverpool, Ohio, will buy telephone equipment.

Tin, Porcelain and Iron, etc.—M. A. Alsworth, Union Church, Miss., wants some work done in tin, porcelain and iron, iron-stone ware, etc.

Water Works.—The city of Greenwood, Miss., will open bids January 6 for the construction of water works. Address the city clerk.

Woodworking Machinery.—The Tennessee River Furniture Factory, Decatur, Ala., wants prices on second-hand band saw, 30 or 36-inch, shaper, planer to plane three feet wide, turning lathe, drum sander, boring machine, tenoning machine and buzz planer.

Woodworking Machinery.—The E. & B. Holmes Machinery Co., Buffalo, N. Y., wants to correspond with manufacturers of clothespin lathes.

TRADE NOTES.

"The Fair" (formerly Pollak & Co.) of Montgomery, Ala., one of the largest stores in the South, has recently been heated by the Peck-Smead Co., of Cincinnati, Ohio.

A handsome desk tool is sent out with the compliments of the Charles Munson Belting Co., Chicago, Ill. The souvenir is an aluminum paper cutter, and reflects the policy of this well-known concern of turning out only the best.

Mr. G. K. Looper, of Atlanta, calls attention in the advertising columns to a fine water-power (about 1000 horse) dam, 600 feet long, ten feet high. Wheat, corn and saw mills, also cotton gin and wool carder, are also on the property, which he offers for sale.

The Berlin Iron Bridge Co., of East Berlin, Conn., has just completed for the United States Projectile Co., at South Brooklyn, N. Y., the steel frame work for new annealing room. The building is 100 feet wide and 150 feet long, and is designed to be a fire-proof structure.

The D. M. Steward Manufacturing Co., of Chattanooga, Tenn., manufacturers of gas tips, is increasing its business largely, and has lately put in additional machinery. Business with the company this year has been double that of 1894, and is still growing in all departments.

Dixon's silicon graphite paint, manufactured by the Joseph Dixon Crucible Co., of Jersey City, N. J., will be used in painting all the tinwork and skylights of the Post-office Department building at Washington. A quantity will also be used on the Capitol and the District Government building.

H. E. Collins & Co., Pittsburg, Pa., sole sales agents for the Cahall vertical water-tube boiler, manufactured by the Aultman & Taylor Machinery Co., Mansfield, Ohio, wish to announce that they have opened a branch office in the Betz Building, Philadelphia, Pa., in charge of Mr. John H. Pendleton, who will carefully look after the interests of the Cahall boiler in that district. Mr. Pendleton has had a large experience in the line of steam engineering and boiler practice. Mr.

Pendleton's practical experience as an engineer enables him to give valuable information to intended purchasers of boilers.

In another column will be found an opportunity to secure a valuable tract of coal and timber property, located on Big Black Mountain, in Harlan county, Kentucky, and about seven miles from Big Stone Gap, Va. This region is, according to the State reports, one of the richest coalfields in the State, and the coal is very pure and of fine quality. The land is covered by a heavy virgin forest of oak, chestnut, whitewood, ash, etc.

About 50,000 feet of piping, to feed 3400 automatic sprinklers, has been contracted for by the Berkshire Cotton Manufacturing Co., Adams, Mass., for its new mill. It is understood that the Esty sprinkler, manufactured by the Esty Sprinkler Co., Laconia, N. H., will be used in equipping the plant. The company is installing the most approved and modern apparatus, and when completed this will be one of the best fine cotton goods mills in the country.

The Meridian Cotton Mills, of Meridian, Miss., has placed its order for revolving flat cards with the Pettee Machine Works, of Newton Upper Falls, Mass. The Cocheeo Manufacturing Co., of Dover, N. H., also is reorganizing its carding-room, and is putting in revolving flat cards, railway heads and drawing frames from the Pettee Machine Works, which latter has also just furnished a large order of drawing frames to the Quinebaug Co., of Danielsonville, Conn.

The Canton Steel Roofing Co., of Canton, Ohio, has been awarded several thousand dollars' worth of work on the United States Postoffice Building, Washington, D. C., which is now nearing completion. This concern has exceptional facilities for executing all kinds of architectural sheet metal work, and is having an increased demand for its heavy gage galvanized conductor pipe, which it makes of No. 18 to 28 gage galvanized sheets; also manufacture square corrugated conductor pipe of either galvanized or copper.

When water is metered to economy in the use of the power, water is of the greatest importance. In this regard attention is called to the Milwaukee water elevator, which claims to use less city water for power than any other, because it raises cistern water, quantity for quantity. The maker of this machine, the Erwin Hydraulic Machinery Co., of Milwaukee, Wis., states that in its operation there is absolutely no waste or loss of power from slippage or friction. Continuing, the company says that "it is a mystery to most people how this machine can double the normal pressure of city water without using double the quantity of water for power, that is being raised, as is the case with the piston machine. With the piston water elevator the pressure of the water is doubled by making the power cylinders twice as large as the pump cylinders, and as a consequence they waste twice as much water as they elevate; while with our machine we double the pressure of the water to be elevated by utilizing the pressure of such water as it enters the machine in conjunction with the so-called power water, by which arrangement we combine and utilize the pressure of the water acting simultaneously in two chambers to drive the water from the third chamber, while the power water in the fourth chamber, which has done its work, exhausts, whereby the water, acting as power, is used with the greatest possible economy." The Erwin Company contracts to construct domestic water-supply systems complete, and has been very successful in this line. Some recent testimonials of its work are from the proprietor of the Irvington Hotel, at Wauwatosa, Wis., who says that with No. 2 system he fills his 20-barrel tank, at an elevation of forty-seven feet, in twenty minutes. This, it will be noticed, is an average of 1920 gallons an hour, and better than stated in the testimonial, and which is considered very high efficiency; and from the E. Welch Hydraulic Machinery Co., of Chicago, stating that the pump placed in Garfield Park last summer is elevating water eighty-five feet, and is still continuing to give perfect satisfaction. The company is now receiving applications for pumps to be used in vinegar factories, breweries, etc., and expects a large trade for this class of work, also for raising water for irrigation, railroad tanks, etc., and expects the latter to be its largest field in the near future. A specialty of work for domestic use in tubular wells has been made up to the present time, as owing to the small dimensions of the pump it can be used in small tubular wells where the ordinary piston or jet pump cannot be used.

MARCH OF SOUTHERN PROGRESS.

Why the Seaboard Air Line is Such a Powerful Influence in this Direction.

[Special Cor. Manufacturers' Record.]
Atlanta, Ga., November 30.

By this time the readers of the Manufacturers' Record who have not visited the exposition have become more or less familiar with the general features of the great display through the very exhaustive and complete accounts given from time to time in its columns. One of the most interesting, not only to railroad men, but the general public, is that in the transportation department. In a recent issue the Manufacturers' Record referred to the exceedingly creditable display made by the Pullman Palace Car Co. and the principal Southern railroad lines, which is attracting almost universal admiration from railway experts, despite one or two criticisms which Northern railway journals for some reason known best to themselves have published.

Standing in front of the great engine which represents the Seaboard Air Line, and then glancing at the little "Tornado," which was the first piece of steam mechanism to haul trains over the old Raleigh & Gaston road, away back in the forties, the contrast truly forms a subject which is well worth considering. Some people in the Carolinas call the Seaboard Air Line the "new road." By the "new road" they mean that within a few years only has it been in operation between the Chicago of the South and its tidewater terminus at Portsmouth. Before the late John M. Robinson conceived the idea of another Southern trunk line, however, the idea of making a general improvement to the Raleigh & Gaston and its connections had been carried into effect by the management to a certain extent. The railroad as it was conducted during the days when the little old "Tornado" was in service presented a much different appearance thirty years later, but the change within the last five years even has been truly remarkable. It does not need an expert to note the superb physical condition of this system and the care which is exercised in keeping it up to the highest standard in every respect. Only a trip over the entire length is needed to convince one of this statement. If ability and energy, backed by capital, can make the Seaboard Air Line among the best railroads in the country, its management has the advantage of all three. But it is not necessary to use the term "if," for those who travel over it will acknowledge this point without question. It has been the policy of the company to spare no effort in securing the best not only in material, but in men, and, as a result, some of its executive officials are among the most noted railroad men in this country. As an illustration of what the Seaboard Air Line is willing to do to improve its facilities, but a few weeks ago twelve powerful locomotives were added to its rolling stock, especially for its service between the North and Atlanta. The engines, one of which is the locomotive we have already referred to, were built by the Richmond Locomotive Works, now famous as one of the best plants of its kind in the world. The Richmond people received orders to put only the highest grade of metal in these engines, equip them with the latest devices for speed and safety, and they have followed these orders to the letter. This outlay alone required considerably over \$100,000, but it is only one of many items of expense that the Seaboard Air Line people have willingly paid in order to give the public up-to-date railway service.

If the "Tornado" were duplicated ten or fifteen times and the combined power of

the fifteen locomotives used in a test of strength against the locomotive of today which is now in the Seaboard Air Line exhibit, there is no question but what the latter would prove the most powerful. This is a significant indication of the development of locomotive building within a half-century, and also indicates the power which is employed to haul the "Atlanta Special" and other Seaboard Air Line passenger trains through the Carolinas and Georgia over this road. It is no wonder that with such models of steam power, the Seaboard Air Line express trains are very reliable in their schedules. Possibly a "hot box," broken car wheel or some other slight accident may cause a delay of twenty minutes or a half-hour, but it is seldom that this time is not made up by an extra pull of the throttle-valve of one of these giant engines, and the train brought into the station as per the time card. To the habitual traveler, who depends on promptness and punctuality in his journeys, such service especially commends itself and is appreciated. The general public, however, also believe in patronizing a transportation company which is reliable. As this is an age of progress, the railroad company which can be depended upon for no delays and for faster time than a rival corporation, even if it be but ten or fifteen minutes, is the company to get the business, to use a popular phrase.

Few persons outside of the railroad world appreciate the time, labor and expense which are necessary in keeping up a modern railroad system like the Seaboard Air Line. First of all, the roadbed must be firm, in order that the track laid upon it may not "give" or sink under the passage of the train. As a modern locomotive with tender weighs anywhere from seventy to 100 tons, and the train may weigh from 200 to 250 tons, an idea may be gained of the enormous pressure to which the roadbed is subjected every time a train passes over it. Thousands of tons of stone must be used in its formation; it must be carefully graded, accurately leveled and kept free from weeds and grass which may grow between the ties and rot them. The ties themselves have to be of heavy hardwood timber, usually oak is preferred, and laid closely together, yet at such regular intervals that one will find no deviation in the spaces between them. Upon the ties are spiked the steel rails, weighing from sixty to ninety pounds to the yard, and here the very best workmanship is required to make a solid structure. The spikes must be driven home, the rails must be tightly riveted together, laid perfectly smooth and straight, in order to prevent friction, as car wheels rush over them at the rate of thirty-five to fifty miles per hour. Were the ties and rails simply laid upon the earth and stone foundation, compact as it may be formed, the railroad would be of little value. It must be thoroughly and carefully ballasted for every yard with crushed stone or some other heavy material which will prevent the track from swaying laterally or from being thrown out of its proper lines. This ballasting is one of the most important pieces of railroad building, and when it is stated that a carload of ballast really goes but a few yards, an idea can be gained of the task of properly ballasting such a railroad as the Seaboard Air Line, nearly 1000 miles in length.

But this is only a portion of the work necessary. There are switches to be put in, with special devices to prevent derailing, etc. A signal system has to be used, stations must be built, also houses for tools and machinery. At convenient places wrecking trains and outfits are stored, although the Seaboard Air Line wrecking crews have little to do, owing

to the few accidents, and these of a minor nature, which occur. The road constantly needs watching, repairs must be made here and there every day in the year. Possibly a culvert needs rebuilding, a portion of the road foundation may have sunk a few inches, those few inches interfering with the fast running of the trains. A rail needs replacing, or a new switch needs putting in. To look out for all these matters hundreds of men are employed, and the outlay for expenses runs up to hundreds of thousands of dollars yearly. This is the case with a first-class railroad line. There were many roads in the South before the war, likewise all over the country, which were neglected, and some are today what are termed mere streaks of rust, where a train is liable to leave the track at any moment and imperil the lives of everyone upon it. It requires but a very short time to change the condition of a road from a high standard to one that is very poor, and, as we have already stated, constant care is necessary to maintain it. This is what is done upon the Seaboard Air Line. Everything, from the spikes which fasten the rails to the locomotives which draw the trains, is carefully overhauled and selected with a view to durability and efficiency, without regard to cost.

It is for these reasons that this company can maintain such a high rate of speed with its trains and give the traveling public such a thoroughly reliable passenger and freight service. How well it pays will be best indicated by the prosperity of the company as shown by the improvements which it has made and has planned, also its standing among financiers.

Among the improvements which are planned by the company is the construction of a new terminus at Atlanta, which will give it the exceptional facilities for handling its freight and passenger business. Several years ago a tract of land in the very heart of the business part of the city was fortunately purchased, and upon this is to be erected a large depot, which will be an ornament to the city and a credit to the company. This will be used by the Seaboard Air Line and several of its Western connections, and will be practically a union depot, where passengers may take trains for any point in the West and Southwest, and may leave for any town in the North. This outlay alone will represent many thousands of dollars, with the necessary tracks and other features incidental to a terminal station. The company has recently completed a very handsome depot at Portsmouth, Va., also for the benefit of its patrons, which is really a combined railroad station and office building. It is of the most modern construction, and has commodious waiting-rooms, a ticket office, is heated by steam, lighted by electricity, and on its upper floor contains a complete suite of apartments for the general officers of the road. It is a building which attracts much admiration and adds greatly to the architectural appearance of Portsmouth. The long wharves and extensive freight warehouses at the Seaboard Air Line docks at Portsmouth are necessary to accommodate its large and constantly increasing business by water. Shipping as it does over the old Dominion Line to New York, the Merchants & Miners' Transportation Co. to New England ports, and by the Bay Line and the Roanoke, Norfolk & Baltimore Steamboat Co. up the Chesapeake bay, it is absolutely necessary to utilize all the space, which covers an area of many thousand square feet.

Of course, in such a display as is seen at the Atlanta Exposition it is impossible for one to get even the faintest idea of

the importance of the Seaboard Air Line,

even by the striking facts which we have already alluded to, or by its very practical exhibit of Southern resources, as shown in the Southern States Building, which we have described at length in a previous issue. In fact, the Seaboard exhibit of fruits, grains, vegetables, etc., is a much greater benefit to the section which it traverses than to the railroad company itself, as the average visitor loses sight of the fact that it has generously made this exhibit, in examining the remarkable variety and the size of the products, and in studying the resources and advantages of the country through these products. For this reason the people in North and South Carolina, and in fact the entire South, owe the company a debt of gratitude for its generosity in going to the expense which it has, and taking pains to prepare such an elaborate display as is shown.

It may be said, in a nutshell, that the Seaboard Air Line is a factor of Southern progress which is inseparably connected with the South, and which is becoming daily more and more important as the enterprise and ability of its present officials are displayed in the broad policy they are carrying out to this end.

D. A. W.

Purchase of Coal Lands.

The Monongahela River Railroad Co. has purchased the Monongah Coal & Coke Co.'s property, consisting of about 15,000 acres of land. This company has been operating very largely, and during the last few years its output of coal has been rapidly increased, until it has taken rank as one of the leading coal companies of the South. The purchase of this entire property by the railroad company indicates that the latter anticipates further extensions and improvements and the opening up on a still larger scale of this great coal territory. The people most largely interested in the coal company are also interested in the railroad company, and likewise in the Baltimore & Ohio Railroad, the close connections indicating that this move is of considerable importance to the latter company.

Atlanta via Pennsylvania Railroad.

For the Cotton States and International Exposition, which is proving a great success and being visited by increased numbers every day, the Pennsylvania Railroad Co. has arranged a most desirable passenger train service with through sleeping cars over their own connecting lines. Excursion tickets are now being sold at the company's principal ticket offices in Baltimore to Atlanta and return at the following low rates and conditions:

\$28.50. For season tickets, sold until December 15, 1895, limited to return until January 7, 1896.
\$21.25. For 20-day tickets, sold daily until December 15, 1895.
\$16.00. For 10-day tickets, sold Tuesday and Thursday of each week until December 24, 1895.

Christmas and New Year Holiday Rates via Pennsylvania Railroad.

For the Christmas and New Year holidays the Pennsylvania Railroad Co. will place on sale excursion tickets between stations on its system east of and including Pittsburgh and Erie and west of Elizabeth and Sea Girt (except between the cities of Philadelphia and Trenton proper), at reduced rates. The tickets will be sold and good going December 21, 22, 23, 24, 25 and 31, 1895, and January 1, 1896, and will be good for return passage until January 7, 1896, inclusive.

Holiday Excursion Rates on the B & O.

In pursuance of its usual policy, the Baltimore & Ohio Railroad Co. will sell excursion tickets between all stations on its lines east of the Ohio river for all trains December 21, 22, 23, 24, 25, 31 and January 1, valid for return journey until January 7, inclusive, at reduced rates.

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 The Miller Gas Engine Co., of Springfield, Ohio, is a newly-organized corporation with a capital stock of \$100,000. It will occupy a portion of the famous Whitley shops, and will build a full line of gas and gasoline engines, and three carboids of machinery are now being put in by the Lodge & Davis Machine Tool Co., of Cincinnati, Ohio, consisting of lathes, planers, drills, milling machinery, shapers, etc. It is expected that the plant will be in operation within thirty days.	
Southern saw works are to the front at the Atlanta Exposition, and the people of that section should feel a commendable pride that the Southern Saw Works, of Atlanta, Ga., Isaac S. Boyd, president, has been awarded a medal. This company writes the Manufacturers' Record as follows: "The award is from the highest jury of awards of the Cotton States and International Exposition, and the only diploma of honor, or silver medal, for extent and excellence of exhibit and saws—the only medal for 'form of inserted-tooth saws,' given in competition with three of the oldest and largest saw manufacturers of the United States."	
 Holiday Excursions—Wheeling & Lake Erie.	
Conforming to its past custom, the Wheeling & Lake Erie Railway will sell local excursion tickets from all stations, and through excursion tickets over principal connecting lines. Excursion tickets will also be sold by connecting lines to points on and via the Wheeling & Lake Erie Railway. When purchasing tickets ask for the new Wheeling time card, taking effect December 8, 1895. James M. Hall, General Passenger Agent.	

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Chattanooga Paint Co.	29	Foster, Chas. F.	6	Ludlow-Saylor Wire Co.	33				
Chattanooga Steel Roofing Co.	28	Foster Machine Co.	31	Ludlow Valve Mfg. Co.	39				
Chester Steel Castings Co.	13	Franklin, H. H., Mfg. Co.	33	Lukens Iron & Steel Co.	18				
Chrome Steel Works	13	Freese, E. M., & Co.	8	Lunkenheimer Co., The	18				
Church, Isaac	9	French, Sam'l. H., & Co.	*	Marion Steam Shovel Co.	2				
Frick Co.	15	Frick Co.	15	Maurice, S. C., & Co.	27				
				Max Belting Co.	11				
				McAfee, C. R. & Co.	6				
				Manhattan Equipment Co.	24				
				Maun & Co.	9				
				Manufacturers' Engineering Co.	32				
				Marine Iron Works	19				
				Marion Steam Shovel Co.	2				
				Maryland Steel Co.	14				
				Maryland Trust Co.	21				
				Mason Machine Works	30				
				Mason Regulator Co.	18				
				Maxwell-Mason Tele. Mfg. Co.	41				
				Mayer, Andrew	21				
				McClave, Brooks & Co.	17				
				McC					

J. WM. MIDDENDORF.

Members Baltimore Stock Exchange.

WM. B. OLIVER.

**MIDDENDORF, OLIVER & CO.
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STOCKS, COTTON, GRAIN.

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GUARANTEES THE FULFILMENT OF CONTRACTS.

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Corner South and German Sts.

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CAPITAL, - \$1,000,000.

A LEGAL DEPOSITORY FOR COURT
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Acts as Financial Agent for States, Cities, Towns, Railroads and other Corporations. Transacts a general trust business. Lends money on approved security. Allows interest on special deposits. Acts as Trustee under Mortgages, Assignments and Deeds of Trust; as Agent for the Transfer or Registration of Stocks and Bonds, and for the payment of coupons, interest and dividends.

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LIFE INSURANCE COMPANY**
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Assets over \$13,000,000.

"One of the most pushing, thriving life companies in the land."—Ins. Age, N. Y. City.
Highest interest rate. Lowest death rate.
Safest investments.JOHN M. PATTISON, E. P. MARSHALL,
President, Secretary.JOHN A. HERNDON, Jr., State Agent,
Manufacturers' Record Bl. Baltimore, Md.

PROPOSALS.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 2, 1895.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 23d day of December, 1895, and opened immediately thereafter for all the labor and materials required to put in place complete the basement columns, first floor framing, &c., of the U. S. Postoffice building at Buffalo, N. Y., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Buffalo, N. Y. Each bid must be accompanied by a certified check for five hundred dollars (\$500). The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Basement Columns, First Floor Framing, etc., for the U. S. Postoffice building at Buffalo, N. Y., and addressed to WM. MARTIN AIKEN, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 5, 1895.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 2d day of December, 1896, and opened immediately thereafter, for all the labor and materials required for the interior finish, plumbing and approaches of the U. S. Postoffice building at Baton Rouge, La., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Baton Rouge, La. Each bid must be accompanied by a certified check for the sum of five hundred dollars (\$500). The right is reserved to reject any or all bids, and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Interior Finish, etc., for the U. S. Postoffice Building at Baton Rouge, La., and addressed to WM. MARTIN AIKEN, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 3, 1895.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 30th day of December, 1895, and opened immediately thereafter, for all the labor and materials required to furnish and fix in place complete the low pressure, return circulation, steam heating and ventilating apparatus, for the U. S. Courthouse and Postoffice building at Mankato, Minn., in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Superintendent at Mankato, Minn. Each bid must be accompanied by a certified check for one hundred and fifty dollars. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Low Pressure, Steam Heating Apparatus, for the U. S. Courthouse and Postoffice at Mankato, Minn., and addressed to WM. MARTIN AIKEN, Supervising Architect.



THE PHILADELPHIA STEEL ROOFING CO.

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514, 516, 518 BEACH ST., PHILADELPHIA, PA.

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Wheel Scrapers, Grading Plows,
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ESTABLISHED 1844.

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**OFFICES IN
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Business men desiring to open offices in Baltimore will find in the

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BUILDING

superior advantages in location, comfort and convenience.

The building is modern in every respect; furnished throughout in quartered oak; steam heat, electric and gas lights, quick elevator service, mail chute, etc.

LOCATION,

corner Lexington and North streets, diagonally opposite the City Hall and Postoffice, and immediately facing the temporary Courthouse, which will be occupied for the next five years. All the principal street car lines pass within one square, giving quick access to every part of the city.

Considering the location, conveniences and services, these are the cheapest offices in Baltimore.

Light, heat and janitor service free. Inspection invited.

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Or for any other purpose requiring great pressure.
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SITUATIONS WANTED.

Advertisements under this head are inserted free of charge for readers of the MANUFACTURERS' RECORD. Advertisements must not exceed five lines—about thirty words—and four insertions will be given without charge.

A YOUNG MAN with six years' experience in the lubricating oil refined oil trade is open for engagement. Address SANDY, care J. F. Earp, Roanoke, Va. d3

YOUNG MAN, practical, experienced well educated and not afraid of hard work, desires office position in the South; competent stenographer, typewriter and bookkeeper; capable of discharging the duties of a student or writer or taking entire charge of correspondence without dictation; at present employed; can furnish reliable references. Address FRANCIS CAL, P. O. Box 66, Staunton, Va. d3

SALESMAN WANTED—On commission, to handle as side line or otherwise, a line of leather-cup valves, cylinder pump valves for pumps, etc. Address GEORGE OBERNE & CO., 3834 North Halsted Street, Chicago. d3

CONTRACTORS.—Wanted by a practical man with several years' experience in public works electric railroads, sewerage, street paving, conduits, etc., a position as SUPERINTENDENT or assistant. Can furnish first-class references. Address D. A. FENTON, 221 West Preston Street, Baltimore. d3

Position wanted as COTTON CARDER; large experience in Mt. Vernon and Laurel Mills, Maryland; acquainted with all machinery; location no object. Address JAMES CHALK, Wethersfieldville, Md. d3

CHAS. GOLDSBOROUGH, Civil Engineer, twenty-five years' experience in railroad surveys and construction, is open to an engagement. Address 505 Cathedral St., Baltimore, Md. d3

A TRAVELING SALESMAN of fourteen years' experience desires to locate January 1st with a reliable firm to represent same in New York and vicinity. Large acquaintance among jobbers, retailers in the hardware line, also mills. Can furnish the best of references. Address ADVERTISEMENT, 47 Clinton Avenue, Jersey City, N. J. d3

WANTED—Position as TRAVELING SALESMAN; thoroughly posted in heating, hose, packings and general mill supplies. Address A. 372, care Manufacturers' Record. d3

Position wanted—By young man of twenty-three, Technical graduate, experienced mechanical draughtsman, stenographer and typewriter and bookkeeper. Would not object to traveling or going to any foreign country. Address P. O. Box 365, Atlanta, Ga. d27

WANTED—Position to equip, or to equip and afterward manage a first-class soap factory; long experience. Address CAP, care of Manufacturer's Record. d27

WANTED—Position in sash door and blind shop or paning mill; use stain's machine and bench work thoroughly; can draw design and lay off work; five years' experience as foreman. Address EXPERIENCE to South Laurel Street, Richmond, Va. d27

YOUNG MAN—(twenty-four) wishes permanent position with large firm who need good men and will appreciate and reward ability, energy and close application. References. Address Box 70, Atlanta, Ga. d27

A RELIABLE MECHANIC would like a position as office or traveling salesman to erect and start machinery. Has good knowledge of wood and iron-working tools and engine. Address ALVIN L. YOUNG, care Manufacturer's Record. d27

SITUATION WANTED—ACID MAKER capable of erecting and managing acid, analysing fertilizers, lead burning and mining business; all references. Address ACID MAKER, care Manufacturers' Record. d27

WANTED—A PRACTICAL MAN of large experience in operating and selling machinery, especially water and steam plants; corn, wheat and roller mills; cotton gins and presses, etc. Will be pleased to serve any manufacturer in the above line for the next year at loc 1 or traveling agent for the Southern States, commencing in January next. Now representing James L. Hill & Co. in the exhibition, Atlanta. Address F. G. MORGAN, Machinery Hall, Exposition, Atlanta, Ga. d27

WANTED—A Situation as Superintendent or Foreman in a Cooperage Manufacturing Establishment; understands it in all its branches—stave, heading and patent hoop—also in running Barrel and Keg Work, both slack or tight work and fish barrels; bush barrels; South Georgia or Florida preferred. Address COOPER, care Manufacturer's Record. d27

WANTED—A position as Manager or Foreman in a Phosphate Plant in Florida by a man with large experience in drying land pebble rock. At present sober, steady, reliable; can give first-class references; ability to handle the business. Address JOSEPH PHOSPHATE, Bennington, S. C. d20

YOUNG Man, twenty-two well educated, seeks a clerical position with Southern firm or corporation, where there's chance of advancement. Address with particular, H. R. WALDMAN, 201 E. 4th Street, New York City. d20

WANTED—Position as Superintendent or Engineer for one mile. Extended experience and first-class references. Address MINER, care Manufacturers' Record. d20

THE advertiser, at present secretary of a manufacturing corporation that will go into business January 1st, will be open to an engagement at that time to assist in management, or would accept position as private secretary or assistant to president or manager. Has thorough knowledge of office work and office correspondence, expert typewriter operator, and has had general supervision of a department of a factory. Married, strictly temperate. A firm or corporation needing the services of an intelligent, capable and industrious worker, address "W." care of Manufacturers' Record. Refer to the editor of the Manufacturers' Record. d20

AMACHINIST, well up in steam engine parts, both plain and refrigerating, wishes a position as engineer where he can do the machine work and make himself generally useful. M., Box 622, Newport, N. W., Va. d20

A First class energetic man wants a position as MANAGER for Corporation Stores. Twenty years' experience; knows when to keep his mouth shut; references or security. Address G. D. SHORT, 37 Ashford street, Brooklyn, N. Y. d20

WANTED Position in the South as mechanical DRAUGHTSMAN, or to superintend machine shop and foundry, by man of large experience; good references. Address J. W. W., 57 Cheney Street, Detroit, Mich. d13

YOUNG married man wants a position in the South to take charge of small electric light plant; fourteen years' experience; can work in any branch of the business; or would like a position to take charge and repair arc lamps; best references. Address S. L. WELCH, 137 Walton Street, Atlanta, Ga. d13

DRAGICAL ENGINEER with 17 years' experience in cottonseed oil milling and other machinery wants position; willing to start on merit or can give the best of references. Address P. W. McKITTRICK, Box 247, Monroe, La. d13

YOUNG MAN, twenty years old, five years' practical business experience, desires a position as assistant OVERSEER on a plantation; good references. Address E. BJEREGARD, Montclair, N. J. d13

DUG CLERK, single man of twenty-five, two years' experience as Prescription Clerk, good bookkeeper and collector, desires position in T. X. S. Very best of references. Address "MAC," 25 Main street, Dallas, Texas. d13

WANTED—By responsible man, contract to make BRICK by thousand, either common or fancy; fifteen years' experience; well acquainted with modern brick and pipe machinery; ten years with Southern labor and clay. Address L. FRENCH, Brandt, Pa. d13

SITUATION WANTED—As assistant MANAGER by young man (25) ten years practical experience in all departments of woolen goods, heavy wools, serges, mantlings, naps, etc.; good knowledge of designing; willing to make myself generally useful. Address GEORGE SHAFARD, Third St., Lowell, Mass. d13

WANTED—By a young man who has a large and active experience as director, manager, secretary and treasurer, superintendent, buyer, salesman and bookkeeper, a position as confidential man. Best of references. Address A. H. H., care Mfrs. Record. d13

AFIRST-CLASS cotton mill MACHINIST and engineer, with A1 credentials, desires an engagement. Address P. A. H., care Manufacturers' Record. d13

LOOK HERE! STOCK FOR SALE
in a big dividend paying company.
Must come quick.
C. M., care Manufacturers' Record.

WINTER HOME.
Several ladies and gentlemen wishing to spend the winter in the South will find pleasant quarters in a pleasant family just outside the city of Greenville, S. C. Especial attention will be given convalescents, (none with pulmonary trouble taken). House built of stone, one of the most comfortable in the South. Home raised milk, butter and poultry in abundance. No pains spared to please. Objections to children. References given and required. Address W. J. THACKSTON, Greenville, S. C.

TATE SPRING WATER
The Most Celebrated Water on Earth...
Tate Spring, Tenn., The CARLSBAD of America.
164 Miles East of Chattanooga,
42 Miles East of Knoxville, Tenn.,
On the M. & C. G. Railroad.
OPEN ALL THE YEAR
CAPACITY SIX HUNDRED,
TATE EPSOM SPRING.
It is believed that this water has never failed to relieve a case of dyspepsia, bowel or kidney disorders (including some forms of Bright's disease), and in functional disorders of the nervous system it is a sure remedy. A trial of this water will convince you.

As there is so much humbug in advertising the land, I take pleasure in referring to the Studebaker Bros. Manufacturing Co., of South Bend, Ind., and Chicago, Ill.; Mellon Bros., bankers, Pittsburgh, Pa., and Inman, Swann & Co., Cotton Exchange, New York, N. Y.; Chas. A. Collier, President Atlanta Exposition; bankers of Atlanta, Ga., and others as to the facts stated within and my responsibility and reliability.

Tate Water is sold by most reliable druggists in all principal cities and towns, and is now being sent, evsly, shipped to Germany and Canada. For any information address THOS. TOMLINSON, Owner and Proprietor, TATE SPRING, TENN.

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the Manufacturers' Record. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

SPECIAL Advertisements OF GENERAL Interest.

OPPORTUNITIES FOR INVESTORS.

WANTED—TO EXCHANGE \$5000 worth of good paying REAL ESTATE for WOOD or IRON WORKING MACHINERY. Address P. O. BOX 327, Chattanooga, Tenn.

\$30,000 WANTED
For TEN years

At 5 per cent. per annum.

Approved Security. First Mortgage on real estate in the City of Tampa, Fla.

For details write to

SOLON B. TURMAN,
TAMPA, FLA.

Practical Rolling Mill Manager

Of some means will join capitalists in erecting new works or in purchasing or leasing old works. Also have a very general knowledge (by experience) of mining, farming and woodlands, or accept position as manager or general manager. Address U. R., care Manufacturers' Record, Baltimore, Md.

Wanted TO BUY CHEAP
Good Spinning MILL for Cotton Chains 2-14 and finer. Give full particulars. Would consider proposition from a good town in the South to start mill; market for good supply guaranteed. Address COITON MILL, care Manufacturers' Record.

FOR SALE

NEAR ATLANTA, GA.

A fine water-power (about 1000 horse) dam, 600 feet long, 10 feet high. Wheat, corn and saw mills, also cotton gin and wool carder, on the property; 70 acres of land, good dwelling, etc. Splendid place for cotton or other factory.

GEO. K. LOOPER, Attorney-at-law,
9% Peachtree Street, ATLANTA, GA.

FOR SALE.

33 1/2 ACRES LAND in high state cultivation, with nice seven-room house, barn, etc., thereon; located within five miles of AIKEN, the great health resort, and suited to truck farming. Address M. E. WADE, Montmorenci, S. C.

TIMBERED LANDS.

We have for sale choice tracts of Long-Leaf Yellow Pine in South Georgia, and Hardwood in North Georgia at tempting prices. We furnish copies of original grants, abstracts of titles and maps, and look after timbered lands for non-resident owners.

LAND TRUST CO. OF GEORGIA,
701, 702 and 703 Temple Court Building,
ATLANTA, GA.

FOR SALE.

6000 ACRES COAL and TIMBER LANDS

located on Big Black Mountain, in Harlan county, Kentucky, and about seven miles from Big Stone Gap, Va. This region is, according to the State reports the richest coal field in the State, and the coal is very pure and of fine quality. The land is covered by a heavy virgin forest of oak, chestnut, whitewood, ash, etc.

N. G. KANT, Owner,
313 Columbia Street, BROOKLYN, N. Y.

FOR SALE.

Stock Yellow Pine Lumber

Teams, good will, Planing Mill, Scroll and Turning Machinery attached, and on good yard location in rapidly improving Southern city. Immediate and surrounding population about 100,000. Healthy climate. Address YELLOW PINE, care Manufacturers' Record.

Saw Mill
FOR SALE
TO CLOSE AN ESTATE.

Almost new, Engine, Boiler, Band Mill, two Gangs, Lath and Picket Mill, Trucks, etc. Also 6000 feet T Rails. Sold at a bargain on very easy terms.

Address

WOOLVERTON & TINSMAN,
WILLIAMSPORT, PA.

MONEY WANTED

For ten years at six per cent. to improve Augusta (Ga.) real estate. the best of security and reference given. GEORGE A. BAILIE, Trustee, Augusta, Ga.

Are You Looking for a Business or Good Location? At Mossy Creek, Tenn. Souther'n R. R.

PARTNER WANTED, with some means, to increase business; a hustler preferred, or will sell if desired, large factory, water power, buildings, machinery, etc. Lumber section. Centre village. Write for particulars. MOSSY CREEK MANUFACTURING CO., Mossy Creek, Tenn.

Kaolin and Corundum FOR SALE.

Large deposit of superior Kaolin near railroad, and the most extensive property of massive Corundum ever found. For particulars write F. R. HEWITT, Hewitt, Swain County, N. C.

FOR SALE.

Stock and Good Will of established business with good trade in

Railroad, Mill and Factory Supplies.

Good clean stock; inventory about \$10,000. No better location in the South. For full particulars address SUPPLIES, Box 207, Norfolk, Va.

For Rent or Lease.

One Brick Machine and Blacksmith Shop and Boiler House with 125 H. P. Boiler in good condition, and One Wooden Building 50x280 feet.

This property, which is well suited for manufacturing purposes, is located on the tracks of the Atlantic & Danville Railway Co., just beyond the limits of the City of Portsmouth, Va.

For further information apply to

SUPERINTENDENT,
Atlantic & Danville Railway Co., NORFOLK, VA.

Fine Manufacturing Property FOR SALE.

The Millburn Gin & Machine Co.

MEMPHIS, TENN.,

With Tools, Foundry and Boiler Shop. One of the finest plants in the United States. At a great bargain. Full particulars of

A. B. PITKIN MACHINERY CO.
Providence, R. I.

FOR SALE.

In the city of CHARLESTON, S. C.

An ideal city for a winter home, full of historic interest, and a climate mild and soft in winter, but not hot enough to be enervating.

A Beautiful Old Colonial Residence And a Handsome Large Modern Residence.

The City of Charleston water supply is obtained from artesian wells, and it has recently been proven to be a valuable *dyspeptic* cure when used as drinking water, and a rheumatic cure when bathed in hot. Both of these residences are supplied with this water.

Also Timber and Farming Lands and Rice Plantations in South Carolina.

For further particulars address

Exchange Banking & Trust Co.
Charleston, S. C.

FOR SALE.

One Greenlee Hollow Chisel Mortising Machine complete, with bits and chisels, and in first-class order. A great bargain for a car shop or wagon factory.

FORCE & BRIGGS,
508 and 510 Liberty St., PITTSBURG, PA.

ATLANTA EXPOSITION SUPPLEMENT.

The Southern Railway Exhibit at Atlanta.

Passing into the exposition grounds through the main gates, the visitor is between the Georgia Manufacturers' Building on the left, noticeable by its ochre-yellow color, and the Transportation Building on the right. Immediately in front, between the entrance and the lake, is a most artistic little building painted white, octagonal in shape, with a gilded dome, surmounted by a figure in the same color. In and around this the Southern Railway has placed its exhibit, which is well worth an examination. On the outside there are four lengths of rails—one of the modern 90-pound rail now in use; another of the same section, but lighter weight; still another of the curious doubled section in use many years ago, and a fourth consisting of flanged iron bands, much like street-car rails, of which the earlier railroads were built. At the different corners of the building there are piles of bauxite (aluminum ore), coals and iron ores from different localities in the railroad's territory.

The interior consists of one room, the same shape as the exterior, with cases of minerals and various products arranged around the wall, while in the centre is an octagonal booth, serving as an office, around which are arranged shelves con-

areas of Virginia and North Carolina, and while possibly not so profitable now as many years ago, it still forms the staple crop in what is known as the "tobacco belt," and contributes many millions of dollars each year to the value of each State's products. In Tennessee the main tobacco belt lies in the upper middle part of the State, but some very fine leaf has also been produced in the celebrated Sweetwater Valley region of East Tennessee, a region noted alike for its fine farms and fertile lands and the thrift and progressiveness of its people. Extending from near Johnson City down beyond Cleveland there is an almost unbroken succession of farms which, the people say, will grow anything from acorns to apricots.

Another staple of Virginia and North Carolina, and one shared in equally by all the other Southern States, is cotton. In a case near that containing the tobacco there are several samples of fine cotton grown in some of these States, showing the opened bolls, the ginned cot-

to erect any exhibit which could. It serves the purpose, however, of interesting visitors. Mr. Snyder, who is in charge, has provided much interesting literature relating to farming and farms, as well as to the artistic part of the fine scenery along the road.

A word as to the great extent of the farming industries in the States in which the Southern Railway has its main lines will not be amiss. Virginia in 1894 produced the following staples:

Wheat, bushels.....	6,995,240
Corn, bushels.....	32,195,858
Oats, bushels.....	5,400,504
Rye, bushels.....	303,307
Potatoes, bushels.....	2,355,752
Buckwheat, bushels.....	71,383
Hay, tons.....	498,537
Tobacco, pounds.....	35,503,984
Cotton, bales.....	12,735

The farms, stock, buildings, etc., are valued at \$294,488,569 and the products for one year at \$42,244,458.

In North Carolina the following agricultural crops were produced:

Wheat, bushels.....	3,475,735
Rye, bushels.....	478,017
Buckwheat, bushels.....	31,547
Potatoes, bushels.....	1,113,210
Corn, bushels.....	32,959,484

The farms, stock, buildings, etc., are valued at \$167,328,457 and the farm products for one year were \$73,342,995.

Oats, bushels.....	10,312,806
Rye, bushels.....	457,341
Potatoes, bushels.....	2,478,762
Barley, bushels.....	107,998
Tobacco, pounds.....	183,618,425
Hay, tons.....	735,762

Alabama produced the following:

Wheat, bushels.....	417,274
Corn, bushels.....	34,760,311
Oats, bushels.....	4,910,347
Potatoes, bushels.....	254,269
Rye, bushels.....	28,520
Cotton, bales.....	854,122
Hay, tons.....	105,112

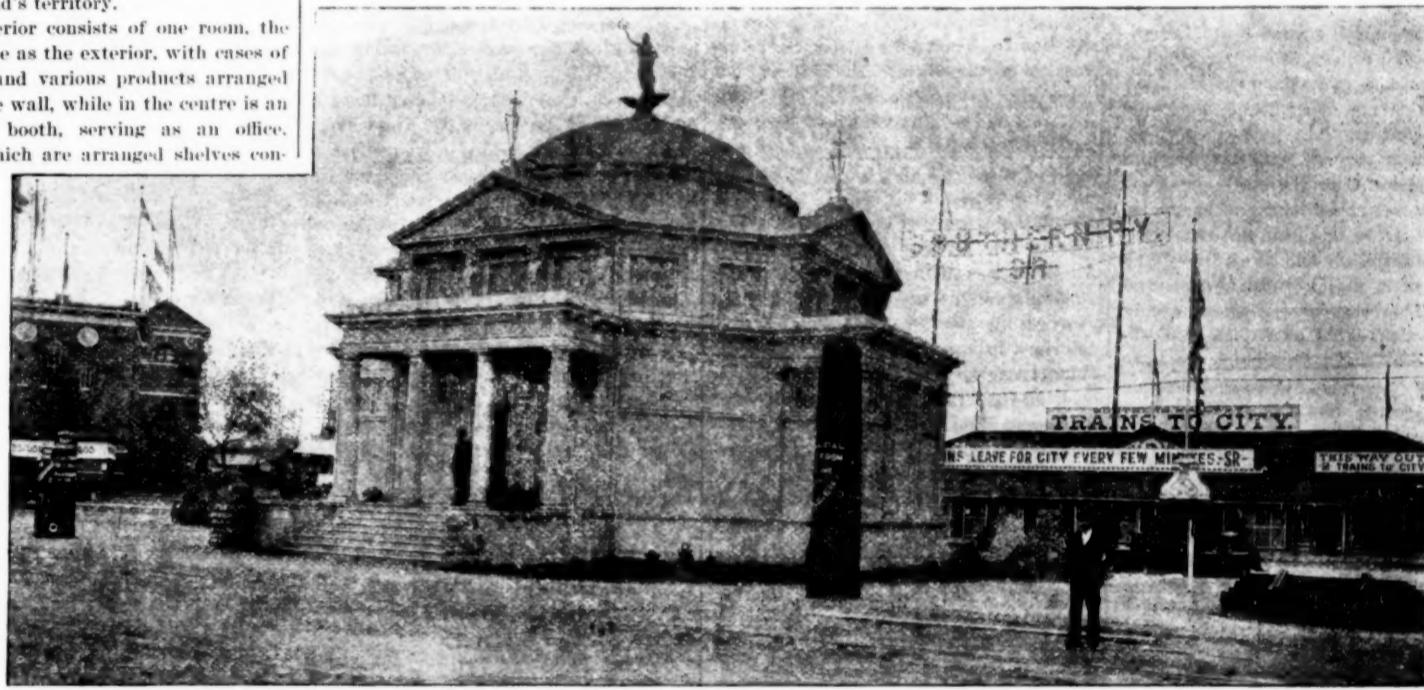
The value of the lands, improvements, etc., were \$146,339,765 and an estimate of the annual value of the farm products \$66,240,190.

Mississippi produced the following:

Wheat, bushels.....	40,670
Oats, bushels.....	1,849,094
Potatoes, bushels.....	421,344
Hay, tons.....	135,980
Cotton, bales.....	1,107,881

The total value of the farms, buildings, etc., was \$167,328,457 and the farm products for one year were \$73,342,995.

These figures show only some of the staple crops produced in the States named. All of these States produce considerable wool, and South Carolina and



SOUTHERN RAILWAY CO.'S BUILDING AT ATLANTA EXPOSITION.

taining various fruits, wines, marbles and other stones. The accompanying illustration gives an excellent idea of the building, showing the railroad's terminus at the exposition grounds.

The tobacco interests are represented by two cabinets containing a number of bundles of various colored leaves from Virginia, North Carolina and Tennessee, some of the latter being marked from thirty-five to seventy-five cents per pound. The small number of specimen leaves does not give an adequate idea of the great extent of the tobacco-growing industry in the States named. From Washington to Spartansburg, S. C.; Danville, Va., to Richmond; Wilkesboro, N. C., through Greensboro and Durham to Goldsboro, and, indeed, along all the branch lines in these two States there are fields after fields of tobacco of all varieties and qualities, and the towns and cities have been most largely built up by factories taking this product and preparing it for market. It is the industry which more largely than anything else was the cause of the rapid settlement and development of the great agricultural

ton, the seeds before the lint cotton is removed, and some pieces of cotton goods manufactured by Southern mills. Both the cotton production and the manufacture of the staple into finished goods have been so fully covered in these columns that it is unnecessary to enter into any detail now. Cotton is grown and manufactured along the line of the Southern road in every State through which it passes, and the prosperity of many of its towns, especially in South Carolina and Georgia, is due to cotton mills operating in them.

The other agricultural features of the exhibit are jars containing some of the varieties of pears, peaches, grapes, plums and other fruits; berries of various kinds, a shelf full of apples of different kinds, and an exhibit of wine produced at Luther, N. C. There are also two small-sized palmettos, which attract the attention of Northern visitors. This exhibit, while showing generally the agricultural products of the territory contiguous to the railroad, does not give a full idea of its extent, nor even of the great variety produced. Indeed, it would be difficult

Tobacco, pounds..... 42,043,620
Hay, tons..... 228,561
Cotton, bales..... 454,920

The valuation of lands, stock, implements, buildings, etc., is \$216,707,500 and the value of the products in one year \$50,070,530.

South Carolina in 1894 produced the following:

Corn, bushels.....	18,728,819
Wheat, bushels.....	807,845
Oats, bushels.....	4,077,696
Rye, bushels.....	19,754
Potatoes, bushels.....	284,272
Hay, tons.....	241,119
Cotton, bales.....	818,330

The total valuation of lands, stock, building, etc., was \$119,849,272 and the products for one year \$51,337,985.

The crops of Georgia in 1894 were:

Wheat, bushels.....	1,627,413
Corn, bushels.....	35,143,735
Oats, bushels.....	7,527,276
Potatoes, bushels.....	340,028
Rye, bushels.....	131,911
Hay, tons.....	174,962
Cotton, bales.....	1,183,924

The figures of the last census show that the lands, buildings, etc., were valued at \$189,249,198 and the value of the products for one year \$83,371,482.

Kentucky produced in 1894:

Wheat, bushels.....	11,005,902
Corn, bushels.....	67,802,297

Mississippi yield a large crop of rice, this being one of the staples of the farmer. Fruits and vegetables of all kinds are produced, both for home consumption and for the market. In many places grape culture is being followed with marked success, for instance at Tryon, N. C., Fruithurst, Ala., Tallapoosa, Ga., and at some of them wines and brandy are made which compete both in quality and price with either the California or foreign product.

While this industry is in its infancy, it is not by any means a new one. Grape and fruit culture and wine-making have been followed for many years in parts of the South, and the experience there gained is now being used in starting other places. Both this and truck farming for the early market, for which certain parts of the South are particularly adapted, offer a field for investment which can be fully appreciated only by those who have visited the South.

Mr. Richards, the land and immigration agent of this road, in a recent issue of the "Southern Field," published by his department, gives the following interesting figures of the great area of

lands unemployed or unimproved, as taken from the census figures of 1890:

	Acres.
Virginia	9,979,406
North Carolina	14,823,327
South Carolina	7,929,415
Georgia	15,617,589
Alabama	12,154,654
Mississippi	10,721,157
Tennessee	10,870,028
Kentucky	9,963,347
A total of	92,050,906

Everything that can be produced in the West can be grown equally well in the South, and cheaper lands and cheaper labor, to say nothing of an increased variety of products and nearness to market, give a decided advantage to the South over the North.

These figures, indicating the capacity of the unimproved lands to accommodate so vast a multitude, take no account of the natural increase in the towns and cities to which these lands are tributary. The increase in the rural districts, as a direct result of cause and effect, creates greater demands in the cities for necessities of a mercantile or commercial nature. Again, the great increase in farm products attracts mills and factories for the purpose of working up the material produced. Thus the agricultural districts will become one laughing sea of prosperity, while the towns and cities partake of the contagion and join in the merriment.

A small exhibit of the curiously carved bowls, spoons, etc., used by the Waldensian colony, which settled near Morganton in Burke county, North Carolina, a few years ago, attracts much attention from the lovers of oddities. The case contains also two heavy wooden shoes, one of them covered with leather, and also a model of their church.

The mineral exhibit is one of particular interest, both to those interested in mining and mineralogy and to all those who are fond of rare and beautiful gems and stones. There are here three unusually fine collections—that of Mr. H. C. Demming, whose articles on minerals have frequently appeared in the Manufacturers' Record; another of Mr. Arthur M. Field, of Asheville, N. C., whose jewelry store, with its display of North Carolina jewels, is one of the attractions of the place, and the third by Mr. Isadore Wallace, of Statesville, N. C. The collections of both Mr. Demming and Mr. Field consist mostly of cut gem stones, with a few pieces of natural crystals. The cut stones are garnets, sapphires, rubies, emeralds, topaz and a number of cut beryls of various shades. Mr. Field shows also some fresh-water pearls. Mr. Demming shows, in addition to the cut stones, an unusually perfect diamond crystal and several small gold nuggets found in McDowell county. Among the most interesting of the stones in this collection are some pieces of quartz crystals, cut and polished, which contain hair-like intrusions of rutile and other minerals.

The collection of Mr. Wallace is almost entirely of uncut crystals, some very large crystals of quartz being shown, also of beryl, tourmaline and other minerals. All of these collections, with the other minerals in the cases along the wall, serve to show what a rich field for the mineralogist there is in the South, particularly in North Carolina.

The cases along the wall show, however, something of direct interest to the capitalist and mining man as well as to the mineralogist. There are pottery clays and china clays, kaolin from several States, some beautiful varieties of marble, granite and other building and ornamental stones, varieties of talc or soapstone, showing it in both the crude and finished state, and specimens of asbestos as mined in Virginia, North and South Carolina. There is a beautiful display of mica, showing both large and small plates, as mined and after being prepared

for market, and also scrap mica trimmed from the edge of marketed plates and formerly thrown away, but now ground fine and largely employed in the arts.

Another case shows varieties of corundum from Macon, Burke, Clay, Madison, Swaine, Cullasaja, Towns and Jackson counties, North Carolina, showing its wide distribution in that State. Besides this there are a number of samples of corundum as prepared for the market, showing different grades of fineness. Another abrasive, a variety of whetstone, somewhat similar to the celebrated Washita stone of Arkansas, is shown from Chase City, Mecklenburg county, Va.

The monazite industry has become quite an important one in certain counties of North Carolina, and samples are shown here of the monazite sand from Shelby and McDowell counties, North Carolina, and Gaffney county, South Carolina. A few specimens of stream tin from near King's Mountain, N. C.; varieties of barite from both Virginia, North and South Carolina, and zircons from North Carolina complete the minor minerals.

The greater part of the collection consists of gold ores from Lancaster and York counties, South Carolina; Guilford, Rowan, Montgomery, Mecklenburg, Union, Randolph, Gaston, Davidson and Cabarrus counties, North Carolina, and Lumpkin county, Georgia. No specimens are shown from the deposits being worked in the Narcoochee valley, nor near Villa Rica, Georgia, nor from any of the Alabama mines which at one time were paying gold producers. There are casts of nuggets found at the Crawford and Sam Christian mines, and also samples of the placer dirt in which these and other noted nuggets have been found. An effort was made to get a cast of the nugget found at the Arbaocochee mine near Hefflin, Ala., last July, which was described in the Manufacturers' Record, but without success. Many of the mines referred to in the papers read by Messrs. Nitze and Wilkins and Mr. Brewer before the American Institute of Mining Engineers at the recent meeting in Atlanta, are represented here by specimens.

There are specimens of lead ores from near Embreeville, Tenn.; of argentiferous galena (silver-lead ore) from Davidson county, North Carolina; another specimen from Cabarrus county, North Carolina, containing both lead and zinc associated with silver. Other specimens of ore of this character are shown from Rowan and Mecklenburg counties, North Carolina, and Gaffney county, South Carolina.

There is an interesting display of copper ores, specimens being shown from Guilford, Cabarrus, Randolph, Davidson and Ashe counties, North Carolina, and from the well-known mines at Ducktown, Tenn., and mines near Culpepper Station in Virginia. Some of the specimens from Mecklenburg, Granville, Person and Stokes counties, North Carolina, are very interesting, showing chalcocrite, bornite, malachite and other copper minerals. With this collection there are a number of specimens of pyrite from different mines in North and South Carolina, some of the fine-grained pyrite found near Blacksburg, S. C., and the larger crystals from Clegg mine in Chatham county, North Carolina, being shown.

The cabinet of iron ores is interesting alike from the number of varieties shown and the importance of the industry which it represents. The output of the South during 1894, as compiled by Mr. John Birkinbine for the "Mineral Resources," being as follows:

	Tons.
Alabama	1,493,086
Virginia and West Virginia	600,562
Tennessee	292,831
Georgia and North Carolina	174,604

Kentucky	42,548
Texas	15,361
Maryland	7,915
Total	2,626,907

The average value of these ores during the year is given as follows:

Alabama	\$0.83
Virginia and West Virginia	1.45
Tennessee	.98
Georgia and North Carolina	.95
Kentucky	1.28
Texas	.75
Maryland	2.25

The average value of all ores produced in the United States during the year named was \$1.14 per ton.

The exhibit of coals shows merely a few of the many varieties mined along the line of the railroad. Specimens are shown from the East Tennessee mines and also from those in Georgia and Alabama. It is of interest to note here the production of coal in the States traversed by this road:

	Tons.	Value.
Alabama	4,397,178	\$4,085,535
Georgia	354,111	290,290
Tennessee	16,900	29,675
North Carolina	2,180,879	2,119,481

The average price per ton is as follows:

Alabama	\$0.93
Georgia	.85
North Carolina	1.76

Tennessee

The average price for the United States during the same year was \$1.09.

An interesting feature of the Southern exhibit is a glass case on one side of the office containing various curiosities in old railroad timetables, tickets, instructions from some of the leading generals for guarding military railroads during the last war and a number of other papers. On the south side of the building there is an exhibit of various woods from along the line, embracing many of the varieties shown by Dr. Fernow in the Forestry Building. A study of this latter exhibit will nearly represent the varieties of wood along the Southern Railway, since it extends through the great timber belts of the South and has in its territory all of the valuable woods used commercially. A tree, cut to show the manner of tapping for turpentine, stands in front of the timber exhibit, on its side being the tools used for this purpose.

H. S. FLEMING, M. E.

THE ATLANTA EXPOSITION.

The Argentine Exhibit—What a Rich South American Country Can Show—Descriptions of Attractive Displays.

[Special Cor. Manufacturers' Record.]

Atlanta, Ga., December 9.

In the eastern end of the Forestry Building, occupying the entire end space from the floor to the ceiling, there is an exhibit of the products of the Argentine Republic, South America, which is of unusual interest and from which a great deal of information can be gained. The trade of this country has heretofore gone most largely to Great Britain, American enterprise having taken but a small share in its development. Dr. Gustavo Niederlein, the Argentine commissioner, has supplied the following interesting data regarding his country. The total area of Argentine is 1,180,000 square miles. Its population is 5,000,000 persons. The capital is Buenos Ayres, of 660,000 inhabitants, and among the other large cities are Rosario, Cordoba, La Plata, Tucuman, Mendoza, Parana, Corrientes, San Juan and others. The country is divided into fourteen provinces, nine territories and one federal district. The agricultural regions, of which there are three, embrace, in the East, 250,000,000 acres especially adapted for cereals; in the West, 10,000,000 acres suited for vineyards, and in the North about 4,000,000 acres suited for sugar-cane and subtropical products. Of this total of 164,000,000 acres only about 9,000,000 are actually cultivated. The agricultural

coal has been found in the national territory of Neuquen and in the provinces of Mendoza, San Juan and La Rioja. Petroleum occurs in Mendoza and in Jujuy, but neither of these have been exploited.

The Argentine has out of fourteen provinces nine mining provinces, which have an area of 886,427 square kilometers, and also nine territories, of which seven are mining territories, occupying about 1,000,000 square kilometers. By the disposition of the federal constitution the mines of the provinces belong to the representative governments and those in the territories to the national government. The old Spanish mining law has been superseded in the republic by a new law, which is much more just and will do a great deal toward aiding in the development of the mineral resources. The legal area of mining concessions is now 300x300 metres. A coal mine is 180,000 square

production from this amounts annually to over \$145,000,000.

Among its industries there are in Argentina 400 large wine cellars, forty-eight sugar mills, 400 steam flour mills, 106 distilleries, eighty-six breweries, twenty oil mills, three saladeros (salting places), two extract and canned meat factories and three frozen meat factories.

The total value of the live stock in the country, which is one of its greatest industries, is \$497,000,000, the annual production amounting to over \$107,000,000. The extent of this industry is shown from the fact that the annual production of cow-hides is something over 4,000,000; of horse-hides 360,000; sheep and goat skins 11,000,000, and in meat 1,849,000,000 pounds; wool 208,000,000 pounds, and tallow and grease \$8,000,000 pounds.

The foreign trade of the country, both in imports and exports, goes most largely to England, the exports to that country amounting to over \$18,000,000 annually; nearly as much to France, and smaller amounts to Belgium, Germany and Brazil, the United States taking only one-sixth as much as England. In its imports England furnishes annually over \$32,000,000 worth, while France, Germany and Belgium each furnish large quantities, the United States in this case, as the other, having the smallest trade, amounting to about \$9,000,000.

Regarding the mineral richness of the country, Dr. Niederlein says gold is found in many places, and it is surprising to see how fast in the old times, before the Spaniards invaded the country, gold had been exploited by the Indians. The province of Cordoba contains this metal principally in Candelaria, Guachi, Pecado, Chitas, Morado and other places; La Rioja in the mountains, Ueapes, Rio Blanco and in the Famatina. The province of Catemora contains this metal, together with copper ore, in Capillitas, and in the mountains Atajo, Agua de Dionisio and Gulampaja. There are a number of other points where it also occurs. Silver is as abundant as gold and found native, or as sulphite, chloride and bromide; occurring also in lead and copper ores. Native silver is exploited in the department of mines in Cordoba and several districts of the Sierra de Famatina. Argentiferous galena is found in many places of the department of Minas in Cordoba and near San Martin in San Luis, as well as in a number of other districts. Copper is mined and usually occurs with gold and silver. The ores are of varied character. Among the better known mines are Capillitas, Hoyada and Cerro Negro. Zinc ores occur in nearly all the provinces, but neither tin nor cobalt have been found as yet. Nickel has been found in some places, and a number of other metals of commercial importance are known to exist in paying quantities.

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metres, an iron-ore mine 120,000 square metres and a gold mine 100,000 square metres. The mining concessions for nitrates and borates consist of 100,000 square metres.

In the provinces there are some 2000 mines of different kinds, and in the territories about 1800 mining claims have been located, but so little development has been done that the total value of exported mining products does not exceed \$1,400,000 annually, about half of this amount being Bolivian silver in transit to Europe.

It would be interesting to go more fully into the description of the products of Argentine as given by Dr. Niederlein, but there is so much to say that quite an extensive volume would be required to justly describe it even in condensed form. An important feature, however, which should be noted is the agricultural product of the country. It should be remembered that the Argentine occupies in the Southern hemisphere something like the position, as to climate, as the United States, and is therefore, with its various zones, eminently suited for the production of the various fruits of husbandry. The average production of the land is somewhat in excess of that of the United States. The value of these products for each hectare of land is about as follows: Wheat \$37.60, corn \$17.74, barley or rye \$34.20, turnips or linseed \$37.33, alfalfa \$95.00, peanuts \$33.64, sugar-cane \$149.39, vineyards \$268.26, tobacco \$770.00, rice \$276.00. The minimum production of wheat is given at 1000 kilogrammes per hectare, of corn 2600 and of grapes 15,000, which yield about eighty to ninety hectolitres of wine. Although the agricultural population of the country is only about 400,000 persons, the value of the agricultural products is nearly \$146,000,000 annually.

As before said, one of the greatest industries of this country is that of its live stock. It is estimated that there are now about 25,000,000 cattle, nearly 6,000,000 horses and mules, 100,000,000 sheep and 3,500,000 goats, together with a number of hogs, ostriches, poultry and so forth. The total value of live stock, as stated, is about \$500,000,000, and the total annual production over \$107,000,000, or about 21 per cent. of the capital employed. The production of hides is one of the most important of these industries, and one of the heaviest consumers of this product is the United States.

In his exhibit Dr. Niederlein has shown nearly all of the important products of his country. A remarkably fine showing is made of the wool produced in the country, two large cases on either side of the exhibit being used for this purpose. Another feature of the exhibit is the fine display of woods of the republic, all of these being beautifully polished and showing to perfection their grain and color. In examining this exhibit a short time ago a well-known Northern manufacturer, whose products of fine veneers and finished woods are noted throughout the country, said that if properly sawed so as to bring out the grain more perfectly, as is done with our native woods, the timber here shown would make finer veneers and finishings than any he had ever seen.

The various grains, such as wheat, rye, barley and others, are shown, and also an extensive display of a number of varieties of beans, peanuts, coffees, nuts of several kinds and other interesting products of the country. A display which is attractive to naturalists is that of some of the varieties of snakes and reptiles which are found there. The upper part of the exhibit consists of several panels containing illustrations of scenes in the Argentine and also some very beautiful skins of the wild animals found in that country.

The National Brick Manufacturers' Association held its tenth annual convention here last week, about 300 members attending. Mr. F. H. Eggers, of Cleveland, Ohio, the retiring president, presided. Mr. T. A. Randall, of Indianapolis, Ind., who has been the association's secretary for many years, was present.

After the usual preliminary business, Mr. Eggers addressed the convention, and at the close of his speech the officers for the coming year were elected. Mr. R. B. Morrison, of Rome, Ga., was made president; G. M. Fiske, first vice-president; second vice-president, Raymond C. Penfield, of New York; third vice-president, Edward Orton, Jr., of Ohio; secretary, T. A. Randall, of Indianapolis, Ind., and treasurer, John W. Sibley, of Coal-dale, Ala.

Professor Morrison addressed the convention, and was succeeded by Mr. D. V. Purington, of Chicago, who read a paper on "The Year's Record and Its Lessons." In the evening a reception was given at the Capitol City Club.

The Christy Fire-Clay Co., of St. Louis, has in the western end of the Forestry Building an interesting display of its various products manufactured from fire-brick, and also shows its fire-clay, both the crude and the burned, in its various stages of manufacture. The Christy Fire-Clay Co. has its works in St. Louis, Mr. J. B. Clements being the general manager and vice-president, and Mr. Jos. Thomas, superintendent of the works. Mr. Chas. J. Moss, 269 Dearborn street, Chicago, who is well known to users of fire-brick, is in charge of the exhibit and is attending to the Southern business.

This company manufactures all special shapes of fire-brick. The exhibit shows tiles for electric motors, special shapes for fire arches, furnace blocks, locomotive blocks, tile for kiln floors, cupola blocks and brick, tiles for bakers' ovens, for boilers and special shapes for chemical works. An interesting model is shown of the continuous glass melting furnace which is in operation at the works of the Adolphus Busch Glass Manufacturing Co., of St. Louis. This is constructed of similar blocks of fire-clay which were made by the Christy Company from its washed pot clay, and are identical with the blocks used in the original glass furnace. An extensive display is made of the clay, showing both the crude material as it is mined and then the product as it passes through the various processes of washing, burning and grinding.

This clay is equal to the German clays, which are so widely used for glass works and glass pots, and in many respects it is claimed by users of glass pots that the clay is superior to that brought from Germany. In fire-brick the company makes four qualities of nine-inch brick in standard shapes, which are marked "Christy XXX," "Christy XX," "Moss XX St. Louis," and "Moss St. Louis." Special shapes are made for any purpose desired. The company is now prepared to enter the Southern field and supply brick for blast furnaces here. In appearance the brick would be well suited for this purpose. The company has received a gold medal, the highest award at the Atlanta Exposition.

The McCully rock and ore crusher, manufactured by R. McCully, of Philadelphia, is exhibited in the western end of the Forestry Building, and has proved of much interest to contractors and miners using this class of machine. The crusher is one of the gyratory type and differs from other machines in that the central rod carrying the mass of iron which moves around the hopper is suspended

from above, resting in one style of the machine on a nut upon a loose washer in the head of the machine, and in the other suspended from a heavy central bolt which is fastened in the top of the machine. In either case a provision is made for either reducing or increasing the size of the rock crushed and for taking up wear in the hopper. As the crushing weight is suspended it naturally requires much less power to operate it. Motion is given by a shaft through the side of the machine at the base, on the end of which is a 45-angle gear-wheel which engages with a smaller wheel lying horizontally around the base of the moving shaft; this wheel in turn acts on an eccentric, which gives the shaft a gyratory motion. The small amount of power required for this machine is evident when it is known that one having a capacity of forty to sixty tons per hour broken to 2½-inch size requires only from twenty-five to thirty horse-power to operate it. This is a matter of prime importance. The working parts are protected from dust first by a collar extending up under the receiving apron and coming immediately under the iron weight, and further by a canvas bellows-cover at the base of the shaft, which fully protects all the working parts there. Ample provision is also made for oiling. The machines in the Forestry Building are connected with an electric motor and can be seen in operation.

In the Manufactures and Liberal Arts Building the Winchester Repeating Arms Co., of New Haven, Conn., has a large and exceedingly-interesting display of its various manufactures. The main feature of the exhibit in a large double case in which are arranged rifles of various styles and the well-known Winchester repeating shot-gun of the new model. Below this case there are two glass cases containing some beautifully-finished and mounted rifles, and also various styles of cartridges, bullets, tools and other supplies. At one end of the exhibit in another case there is a pyramid of cartridges, showing both the smokeless and black-powder cartridges for shot-guns, and various styles of rifle cartridges, those attracting most attention being the new cartridges for the army and navy rifles recently adopted by the United States government.

Sportsmen generally are attracted here both to see the rifles and to examine the new model repeating shot-gun which is so rapidly coming into favor. The barrel of the repeating shot-gun, known as the 1893 model, is made from a piece of steel nine inches in length and two inches in diameter. A five-eighths-inch hole is bored through this, and the cylinder thus formed is then rolled into the required length, that is, so as to allow of cutting a 30-inch barrel from it. The barrel thus made is then drilled into the regular 12-gage, after which it is turned on the outside and the threads cut which fasten it to the frame. After that, it is polished and browned.

The new riot gun made by this company is similar in construction to this repeating shot-gun, though the barrel is considerably shorter. The first of these guns was delivered in July, 1893, and there are now some 34,000 of them in use.

The cartridge of the new army gun, the Krag-Jorgensen, is shown in a glass case in one part of the exhibit. The penetration of this bullet, which is 30-calibre, is shown in a case made of a series of boards set together. This shows a penetration of fifty-two inches through pine boards set one foot apart, and afterwards fastened together and set in the small case, the boards then being sawed so as to cut in half the hole made by the bullet. This hole is very clean, showing little or no

movement of the bullet in its course through the wood. Alongside of this is shown another case in which the new navy gun, the Lee, shooting 23-calibre, has penetrated fifty-four inches of pine plank set one foot apart. This bullet, though smaller than the other, made a cleaner hole and shows two inches more penetration. In both cases the bullets, which are of the steel-jacket type, are intact. They were fired by powder made in this country. This great penetration may be appreciated when it is remembered that the ordinary lead bullet under the same circumstances would have a penetration of about eight inches. The new 23-35, 1894, model repeating rifle which is shown here uses a new metal-jacket bullet with a soft-lead nose, the purpose being to give great penetration, and at the same time have the nose of the bullet expanded on striking a hard object, thus tearing a large hole.

Another feature of the exhibit is a Hotchkiss rapid-fire gun such as is used by every government on its vessels. That here shown is a six-pounder. The Winchester Company manufactures all the ammunition used for these guns, and displays various sizes of shell projectiles, from one to 150 pounds, both of the solid and explosive type.

The Sanitary Construction Co., of New York, has in the Manufactures Building a little appliance which it terms a household garbage carbonizer, which can be specially commended both to the attention of housewives and city officials. Everyone knows the difficulty there is both in winter and summer in disposing of the household garbage. In summer, unless it is promptly removed, there will be a very unpleasant odor arising from it, and in winter, when it is cold, the contents of the buckets are liable to freeze, and the effort to remove it is likely to bring destruction to the buckets. In the country, where everything of this kind is dumped on the ground a short distance from the house, there always arises from it an odor which is extremely disagreeable. In cities a garbage barrel is used, and the city authorities spend a great many thousands of dollars annually in emptying them and carrying their contents away. Now, to avoid all this, there has been constructed this little arrangement, which is inserted in the stovepipe of every range. In this all the household garbage is placed; the heat from the stove carbonizes it. All the odors pass up the chimney, and the matter which remains in the tray is simply dumped into the fireplace, where it adds its quota of fuel. This is undoubtedly one of the most useful and simple devices for the disposal of kitchen garbage that has ever been constructed. Its cost is extremely small, and can be used on any kind of a stove except where gas is the only fuel, and such stoves are rare.

The Hauser, Brenner & Fath Co., of Cincinnati, has in the Agricultural Building a good exhibit of its manufactures. The main feature of the exhibit is an enormous cask, one of a lot of eighty sold to Garrett & Co., wine growers in Weldon, N. C. The capacity of the cask is 5000 gallons. In front and on either side of this there are three pyramids of smaller casks of various kinds, all of them showing fine cooperage work.

Chas. A. Schieren & Co., of New York, who operate the well-known Dixie tannery at Bristol, Tenn., have in Machinery Hall an extensive exhibit of their various styles of belting. Among the standard styles there are two, three, five and six-inch belts of various lengths, round belting of different styles, black perforated belting and link belting. Some of the

notable belts in the exhibit consist of rolls of 72-inch belting, 56-inch belting and 40-inch belting. The exhibit was awarded a diploma of honor and a silver medal. The company displays also several kinds of electric leather belt dressing.

N. K. Fairbank & Co., the well-known manufacturers of cottolene, have in the Agricultural Building a striking exhibit of their products. The feature of this exhibit which has proved unusually attractive, especially to the ladies on the grounds, is that on one side there is a counter, behind which is a stove where cottolene is used in cooking various dainties, which are afterwards distributed to the public. This is a part of the World's Fair exhibit made by the company. On one side of the exhibit is a pyramid where is shown the constituents of cottolene; that is, winter-pressed cottonseed oil and pure beef suet. Below this are samples of the cottolene produced. The manufacturers state that they have already felt the effects of the exhibit on the grounds in largely increasing their sales through the South. It has given them the opportunity to introduce the product in the South, where it was comparatively little known. Cottonseed oil has been used for a long time, but a prejudice against it has existed. This has been overcome in a large measure by the exhibit, as the cottolene is shown to be free from the objections inherent in the ordinary refined oil.

The Woonsocket Machine & Press Co., of Woonsocket, R. I., has in the Machinery Building an interesting exhibit consisting of a 6x12 stubber, fifty-two spindles; a 10x5 intermediate, eighty-four spindles, and a 7x3½ fine, 144 spindles. These machines all contain the latest improvements made by this company. One of these is the Parker step for speeders. This contains a reservoir for oil, and provides a felt filter between the reservoir and spindle bearing, so that all oil is strained. By means of holes drilled between the reservoir and bearing oil enters the bottom of the bearing and is siphoned back into the reservoir.

The Daly differential gearing for fly-frames is designed to reduce the friction and breakage caused by several bevel gears moving at double the speed of the jack shaft. In this there are spur-gears running in the same direction and at half-speed. The improved vertical and angle shaft is another feature. One of the important parts in the manipulation of cotton is to avoid all possible stretch, especially an uneven stretch, which leaves the roving light and heavy at intervals, and it has been the object of every machine manufacturer to overcome what is known as the "give and take" on a roving-frame, which is caused by the horse-head. The horse-head has two motions: one is the rotary motion given to the gearing, and one the traverse motion given to the horse-head by the traverse of the rail to which one end of the horse-head is attached, while the rail, traversing the intermediate on the head, is traveling around the gear on the main shaft, and also around the gear on the bobbin-shaft, either against the motion of the gear or with the motion, according to the direction in which the rail is traveling. This vertical shaft will, it is claimed, do away with all loss or gain, as the motion of the gears is always in one direction, regardless of the direction taken by the rail. Still another improvement is that for regulating tension on roving-frames without changing the contact gears. Overseers of carding and roving machinery have found it difficult at times to get just the proper tension of the cotton on fly-frames on account of the atmospheric changes, and also by the extreme change made by

changing one tooth, which was made absolute when a contact-gear was changed. Usually the change is about one-fortieth. This would either cause the cotton to run too tight or too slack, as the case might be; therefore either stretching the cotton and making it run light, or slackening to such an extent as to cause it to run heavy, which, of course, means to the millman uneven weight of cloth, besides smaller productions from his frames. The object of the improvement is to overcome, as far as it is practicable, the above conditions, and, at the same time, make it convenient for the overseer or his second-hand to make the required change without having first to look up a gear, and afterward a wrench, beside having to crawl down under his frame to make the desired change. With the improvement the change is all made from the front of the frame, and all that is required to be done is to unlock the controlling wheel and turn the handle to the right or left, as may be required, which will make the change on coarse frames of one-eighthieth and on fine jack-frames a change of one-ninety-fifth.

The Hartford Steam Boiler, Inspection & Insurance Co. has in the Machinery Building a very interesting exhibit, one of the most complete that has ever been made, of pipes, tubes and parts of boilers which have exploded. These specimens show the results of scale of various kinds on boiler tubes and pipes, and are very instructive to all users of steam. In addition the company has a large and handsome album containing photographs of buildings and works which have been destroyed by boiler explosions. This exhibit forms a valuable object-lesson to all users of steam, showing, as it does, the disastrous results occasioned by scale in the boiler tubes and feed pipes.

The American Fire Engine Co., of Seneca Falls, New York, has in the Fire Building two of its well-known fire engines. Both of them are fully nickel-plated and make a handsome appearance. The engines are of two styles, one having horizontal pumps, the other vertical, the latter using a balance wheel. Both engines are strongly made and finely finished.

H. S. FLEMING, M. E.

The Louisiana Exhibit at Atlanta.

Atlanta, Ga., December 2.

In an article appearing in your issue of November 15, entitled, "A Just Criticism," pointing out the failure of Southern States to exhibit, and the stupidity of politicians in failing to grasp a good opportunity, by H. S. Fleming, M. E., a great injustice is done the State of Louisiana. Among other things, this article states that Louisiana has a small exhibit, and other States are placed in the same category. I do not wish to criticize what has been said about other States, although I know a great deal of it to be misleading to the public, but I do wish to make known the following facts in regard to Louisiana. She has the largest space, filled with the largest variety of agricultural products and manufacturing industries of any other State exhibit upon the grounds. Her space covers 5097 feet, every foot of which is packed and crammed with the products and manufactures of the State. In our agricultural products we have eighty varieties of corn, carefully labeled and classified; sixty-odd varieties of cotton, over 100 varieties of sugar-cane, fifteen to twenty varieties of rice, 150 varieties of Irish potatoes, fifty-one varieties of sweet potatoes, over twenty-five varieties of forage crops, between thirty and forty varieties of grasses, fifteen varieties of oranges, several varieties of pecans, pears and Japanese

persimmons and a large exhibit of fresh vegetables, which are being renewed weekly, together with bales of hay and cotton, and over 300 jars of preserved fruits. Besides these, we have a fine display of fibres and goods manufactured therefrom, ramie, two varieties of jute, hemp, etc. Of tobacco grown and manufactured in this State we have, in many exhibits of each, typical samples of Perique, yellow-leaf and cigar, together with manufactured products from all three. In fact, I may say so perfect was the exhibit of our agricultural products that a gold medal, the highest award, was given to Louisiana. In addition, over sixty manufacturers of the State, mostly from New Orleans, have their finished products, representing nearly every industry, covering the manufacture of clothing, boots and shoes, shirts, hosiery, harness, soap, perfumery, liquors, canned goods, cigars, moss, cooperage, etc. The New Orleans Sugar Exchange has a magnificent exhibit of the plantation sugars of this State. The Board of Trade has sent a splendid exhibit of rice in all forms, from the rough rice all the way up to the finest finished product, including bi-products and the manufacture of hulls, bran, polish, paddy, etc. The Cotton Exchange has a fine exhibit of cotton. Besides these, our cotton factories have their finished products. And the State geological survey has over 300 samples of soil, several samples of pure sulphur, petroleum, marble, gypsum, fire-clays, etc. Miles & Co. have a splendid exhibit of salt, with the statue of Lot's wife surmounting it. Our native woods are represented by over 150 boards, nicely prepared and labeled, our cypress being represented by a beautiful mantelpiece, an office handsomely finished and a railing surrounding our space. Our mineral wells are represented, as well as several of our coffee-importing houses exhibiting the article in its various stages of manufacture and distributing the beverage ready made. Of the prizes, Louisiana took four gold medals, six silver medals, fifteen bronze medals and two honorable mentions. As one thoroughly conversant with the resources of this State, it was hardly possible to have gotten up a more diversified and extensive an exhibit. Of course, we could have multiplied them many times their present quantity had space permitted; but every foot assigned us has been filled to overflowing with most attractive exhibits, and our space is larger than that assigned to any other State. We did not erect a building, because the exposition management generously assigned us all the space we asked for, and we spent our money in making the collection above described. Distributed through this exhibit are numerous photographs, engravings and maps representing the different industries there presented.

With these facts before us, and with the assurance of the board of judges, several of whom I have talked with, that our exhibit was fully equal, as a whole, to any State on the ground, and surpassing all others in the variety and classification of products, I am a little surprised that Mr. Fleming should pass us by with simply stating that Louisiana had a small exhibit. I do not wish to be an apologist for South Carolina, Florida or Arkansas, but being their neighbors in the Agricultural Building, I will state that all three of them have very fine exhibits, and fully represent the wonderful advantages of their States. South Carolina has a specially fine exhibit. I hope you will do justice to our State by at least correcting the injury done her by the publication of the article referred to.

WM. C. STUBBS.

Commissioner for Louisiana and Director La. State Experiment Station.

The Manufacturers' Record is glad to be able to publish such a statement about the Louisiana exhibit. What the correspondent of the Manufacturers' Record was emphasizing was the failure of Southern States to fully grasp the opportunity offered at Atlanta and in special State buildings make complete exhibits, the magnitude of which would arrest attention and compel investigation.

North Carolina's Cotton Interests.

Trade editions and anniversary supplements are features in connection with daily journalism that are common. They are of more or less merit, but too often are devoted to self-praise. The Raleigh News and Observer, of Raleigh, N. C., however, is a very commendable exception. It has published a "thanksgiving tribute to the State's greatest industry" in the form of an edition principally devoted to cotton manufacturing. After a careful examination the reader willingly acknowledges that it is a most creditable effort in every respect. Illustrations and descriptions of the principal cotton mills of the State, sketches and portraits of prominent mill-owners, scenes from the cotton-field, descriptions of the class of labor and statistics relative to the number of employees and wages paid are only a few of the subjects which are thoroughly and effectively treated. Ex-Governor Holt gives a history of plaid-making in Alamance county, one of the famous manufacturing centres of the State. Governor Elias Carr treats of the State's advantages as a manufacturing centre, and other writers cover other phases of the industry. The title page is illustrated with a very appropriate design, which is finely executed, as, indeed, are all the illustrations. The edition, as a whole, reflects great credit upon the News and Observer.

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